THE AMERICAN ENERGY INITIATIVE, PART 20: A FOCUS ON EPA'S GREENHOUSE GAS REGULA-TIONS

HEARING

BEFORE THE

SUBCOMMITTEE ON ENERGY AND POWER OF THE

COMMITTEE ON ENERGY AND COMMERCE HOUSE OF REPRESENTATIVES

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THE AMERICAN ENERGY INITIATIVE, PART 20: A FOCUS ON EPA'S GREENHOUSE GAS REG-ULATIONS

TUESDAY, JUNE 19, 2012

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON ENERGY AND POWER,
COMMITTEE ON ENERGY AND COMMERCE,
Washington, DC.

The subcommittee met, pursuant to call, at 10:09 a.m., in room 2123 of the Rayburn House Office Building, Hon. Ed Whitfield (chairman of the subcommittee) presiding.

Members present: Representatives Whitfield, Shimkus, Walden, Terry, Bilbray, Scalise, Olson, McKinley, Pompeo, Griffith, Barton, Upton (ex officio), Rush, Castor, Sarbanes, Dingell, Green, Gonzalez, and Waxman (ex officio).

Staff present: Charlotte Baker, Press Secretary; Maryam Brown, Chief Counsel, Energy and Power; Allison Busbee, Legislative Clerk; Cory Hicks, Policy Coordinator, Energy and Power; Heidi King, Chief Economist; Mary Neumayr, Senior Energy Counsel; Michael Aylward, Democratic Professional Staff Member; Phil Barnett, Democratic Staff Director; Alison Cassady, Democratic Senior Professional Staff Member; Greg Dotson, Democratic Energy and Environment Staff Director; Kristina Friedman, Democratic EPA Detailee; Caitlin Haberman, Democratic Policy Analyst; Elizabeth Letter, Democratic Assistant Press Secretary; and Alexandra Teitz, Democratic Senior Counsel, Environment and Energy.

OPENING STATEMENT OF HON. ED WHITFIELD, A REPRESENT-ATIVE IN CONGRESS FROM THE COMMONWEALTH OF KEN-TUCKY

Mr. Whitfield. I would like to call this hearing to order this morning and welcome all of our members of the first panel. We genuinely appreciate your being with us today and your testimony on this very important subject matter of greenhouse gas regulations.

I might say that today is the 20th day of our American Energy Initiative, and this morning, as I said, we will focus on the Environmental Protection Agency's greenhouse gas regulations. Now, there are so many regulations coming out of EPA that it is very easy to trivialize the impact of these regulations. EPA's greenhouse gas regulations range from rule-setting new emission standards for cars and trucks to complex permitting requirements for donut factories, farmers, to rules affecting power plants. These greenhouse

gas rules are a regulatory overreach in my view and serve as a backdoor cap and tax policy that Congress rejected in the last Congress. Any action regarding climate change should rest with Congress and not unelected and unaccountable bureaucrats at the En-

vironmental Protection Agency.

As a matter of fact, Lisa Jackson as administrator at EPA, I think she has unequivocally demonstrated that she intends to decide what fuels will be used to produce energy in America. The volume of regulations, the underestimated cost of the regulations, the direct job loss caused by the regulations, and the very brazen legal theories advocated by EPA attorneys has demonstrated in my view a callous disregard of some legal precedents. And the lack of concern about the families, for example, of coalminers who lose their jobs and people who work at utilities that burn coal that lose their job and the impact that it has on their family is something that I think we frequently just sweep under the rug because we are talking about how these regulations are going to create new jobs in other industries. But what about those people that lose their jobs and the impact on them?

And I would just say that not only Members of Congress and others affected by these rules but the courts themselves I think are having some rather harsh language about what EPA is doing. In the recent Sackett decision, the Supreme Court unanimously rejected EPA's effort to deny due process to landowners. And one of the Justices in writing the opinion said, "the position taken in this case by the Federal Government would have put the property rights of ordinary Americans entirely at the mercy of the Environmental Protection Agency." He further said that "in a Nation that values due process, not to mention private property, such treatment is unthinkable."

And then in the recent Luminant case, the Fifth Circuit Court of Appeals rejected EPA's attempts to disapprove a Texas permit program, and said that the EPA's disapproval was based on "purported nonconformity with three extra-statutory standards that the EPA created out of whole cloth.'

And then in the recent Spruce Mine decision, a Federal judge rejected EPA's unprecedented attempt to invalidate a West Virginia coal mining permit that had been issued many years before. The court called EPA's rationale "magical thinking" and "a stunning power for an agency to arrogate to itself."

And there are many other court decisions pending and we will see what the courts hold in those cases, but there seems to be a trend of holdings, a lot of holdings about "magical thinking" at

EPA.

It does seem to be an EPA-fulfilled prophecy that no new coal plants will be built in this country. And on our current path, it appears to be this Administration's fulfilled prophesy that electricity prices are going to go up. It is simply not acceptable, and I think we have an obligation and responsibility to work tirelessly with our colleagues to stop these policies that destroy jobs and will increase consumer electricity prices, particularly at this time in our Nation's history when we are trying to stimulate our economy.

Once again, I do appreciate the witnesses being here and we look forward to your testimony.

At this time, I would like to recognize the gentleman from Illinois, Mr. Rush, for a 5-minute opening statement. [The prepared statement of Mr. Whitfield follows:]

STATEMENT OF CHAIRMAN ED WHITFIELD Hearing on the American Energy Initiative, Day 20, EPA Greenhouse Gas Regulations June 19, 2012

This hearing will come to order. Today is the 20th day of our American Energy Initiative, and this morning we will focus on the Environmental Protection Agency's greenhouse gas regulations.

I would note that we did invite EPA to testify, and while they couldn't make it today, we will be hearing from them later this month on the 29th.

At a time of chronically high unemployment, the last thing job creating industries need is more red tape. But that is precisely what EPA is imposing on the economy with its greenhouse gas regulations. Since 2009, EPA has already published in the Federal Register more than 1,800 pages of final rules relating to greenhouse gases, and more than 700 pages of proposed rules are pending.

EPA's greenhouse gas regulations range from rules setting new emissions standards for cars and trucks, to complex permitting requirements for donut factories and farmers, to rules affecting power plants.

These GHG rules are a regulatory overreach and serve as a backdoor cap and tax policy that Congress has already rejected. Any action regarding climate change should rest with Congress and not unelected and unaccountable bureaucrats at the Environmental Protection Agency.

And it isn't just Congressional Republicans who think EPA is overreaching. An increasing number of federal judges do too.

In the recent *Sackett* decision, the Supreme Court unanimously rejected EPA's efforts to deny due process to landowners. Justice Alito concluded that:

"The position taken in this case by the Federal Government . . . would have put the property rights of ordinary Americans entirely at the mercy of the Environmental Protection Agency." He further said that "In a nation that values due process, not to mention private property, such treatment is unthinkable."

In the recent *Luminant* case, the Fifth Circuit Court of Appeals rejected EPA's attempts to disapprove a Texas permit program, and said that the Obama EPA's disapproval was based on "purported nonconformity with three extra-statutory standards **that the EPA had created out of whole cloth."**

In the recent *Spruce Mine* decision, a federal judge rejected the Obama EPA's unprecedented attempt to invalidate a West Virginia coal mining permit. The court called EPA's rationale "magical thinking" and "a stunning power for an agency to arrogate to itself."

Other major court decisions are pending and we will see what the courts hold, but I see a trend of holdings about "magical thinking."

The most recent example of overreaching is EPA's proposed GHG NSPS rule for new coal-fired power plants. EPA contends that the rule has no cost because no one was going to build a coal plant in this country anyway because natural gas is so cheap today.

Five lawsuits filed last week beg to differ and we have a witness here today who will testify that they are trying to build a new coal-fired power plant in Kansas, and that it is EPA regulations that are preventing that company's project from going forward. That witness testifies that EPA's proposed greenhouse gas standards will effectively block its planned project, and the \$70 million dollars invested in that project, and the years spent obtaining the requisite federal permits, will be wasted if EPA's proposed NSPS rule for power plants is allowed to stand.

It is an EPA-fulfilled prophesy that no new coal plants will be built in this country. And on our current path, it appears to be an Obama Administration fulfilled-prophesy that electricity prices will necessarily skyrocket. It's simply not acceptable and I will continue to work tirelessly with my colleagues to stop these policies that hurt jobs and will increase consumer electricity prices.

I appreciate all witnesses being here today and look forward to the testimony. Thank you.

OPENING STATEMENT OF HON. BOBBY L. RUSH, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF ILLINOIS

Mr. Rush. I want to thank you, Mr. Chairman.

Today's hearing continues the concerted effort by those in the majority party to whittle the authority of the EPA and to delegitimatize the Agency's regulation as unnecessary job killers in an attempt to counteract all of the various respected peer-reviewed studies that show that the Environmental Protection Agency actually creates jobs and stimulates the economy, as well as leading

healthier and more productive constituencies.

Today, we will hear more tall tales that attempt to debunk these facts and lead us to believe that any policy that regulates greenhouse gases will automatically lead to increased job losses. However, it is extremely important, Mr. Chairman, for all of us to remember that just because a few industry sources tell us that regulating greenhouse gases will be costly and will yield little to no benefit does not make it true. In fact, Mr. Chairman, I would like to submit for the record a June 6 Chicago Tribune article entitled "Extraordinary Extremes: Climate Scientists Explain our Crazy Weather." This is an article written by a former panelist who once appeared before this subcommittee, Dr. Donald Wuebbles, a professor in the Department of Atmospheric Sciences and Electrical and Computer Engineering at the University of Illinois at Champaign-Urbana; and Mr. Aaron Packman, a civil and environmental engineering professor at Northwestern University. These two climate change experts reported that "in March more than 15,000 warm weather records across our country were broken." My city Chicago had its warmest March in recorded history. The National Oceanic and Atmospheric Administration received 223 reports of tornadoes; 80 of these tornadoes occurred in March alone. Ohio and parts of the Southeast faced a string of tornadoes in early March that caused an estimated \$1.5 million worth of damage.

Mr. Chairman, these experts note that scientific models suggested these types of natural disasters are likely related to human-induced climate change, but also they advise fortunately that there are steps that we can take to mitigate these effects. We can grow America's investment in renewable energy, powering more homes with wind and solar energy. We can advance energy efficiency policies and use better appliances and equipment that avoid wasting energy and save money on utility bills. We can manufacture and drive more fuel-efficient cars that save money at the gas pump, lessen America's dependence on foreign oil, and reduce greenhouse

gas pollution.

Mr. Chairman, my fear for today's debate is that it is being framed in a way where we are presented with a false choice between implementing environmental standards to protect our citizens or allow "job-killing" EPA regulations to move forward. In fact, history has proven that we could indeed do more. We can protect our environment and balance regulations that create jobs and new technologies, protecting the public health, increase worker productivity, and promote clear air.

We have done precisely this before and, Mr. Chairman, I am cer-

tain and I trust that we would do it again.

With that I yield back the balance of my time.

Mr. WHITFIELD. Gentleman's time has expired.

At this time, I recognize the gentleman from Michigan, Mr. Upton, Chairman of the Energy and Commerce Committee, for opening statement.

OPENING STATEMENT OF HON. FRED UPTON, A REPRESENTA-TIVE IN CONGRESS FROM THE STATE OF MICHIGAN

Mr. UPTON. Well, thank you, Mr. Chairman.

It was nearly 3 years ago that cap-and-trade legislation was being voted on by this committee and then the full House, and few of us who were involved in that debate are likely to ever forget it. Cap-and-trade, at least for me and many others, was bad news all around, high cost without benefit. Nonetheless, proponents made their case in favor of it, and one of their arguments is very relevant to today's hearing. At the time, EPA Administrator Lisa Jackson and other supporters asserted that enacting cap-and-trade legislation was a far less costly alternative to piecemeal EPA regulations seeking to achieve the same ends.

I certainly did not agree with the logic that we should pass a bad global warming bill in order to avoid worse nightmares and regulations, but Administrator Jackson was right about one thing—as awful as cap-and-trade energy taxes would have been, the Agency's greenhouse gas regs are looking even worse. And EPA has only begun to roll out its regulatory agenda.

We are already seeing the Agency's greenhouse gas permitting requirements acting as yet another roadblock to the economic recovery and job growth. It is a sad irony that the very job-creating activities this struggling economy screams out for—things like building a new factory or expanding an existing one, or boosting electric generating capacity to meet demand—are precisely what is being targeted by EPA with these burdensome GHG permit requirements. And this new red tape is above and beyond the long list of other measures imposed by the Clean Air Act and other statutes

And there will be more to follow, including New Source Performance Standards for GHGs from coal-fired power plants and refineries. It is not only the largest employers who are at risk; we are also seeing signs of EPA's GHG regs actions reverberating throughout the rest of the economy, too. Small businesses and farmers that are not directly regulated, at least not yet, are going to have to deal with the higher energy costs that will be passed on to them by those who are.

Today, we have a valuable opportunity to listen to the job creators, large and small, who have serious concerns with many aspects of EPA's greenhouse gas agenda. I was proud to partner with Congressman Whitfield and Senator Inhofe, and many others on both sides of the aisle, to address those concerns in H.R. 910, the Energy Tax Prevention Act. And I look forward to continued discussions to ensure a pro-jobs, pro-growth, and pro-energy future for America.

And I would yield the balance of my time to Mr. Barton.

OPENING STATEMENT OF HON. JOE BARTON, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF TEXAS

Mr. BARTON. Thank you, Chairman Upton, and thank you, Chairman Whitfield and Ranking Members Waxman and Rush, for

holding this hearing.

Today, we are looking at greenhouse gas regulations. According to the EPA's own model, if we implement everything that they have proposed, we are going to reduce CO2 concentrations in the upper atmosphere by 2.9 parts per million—2.9. This will result, according to their model, in a temperature reduction that would otherwise have occurred of somewhere between 6 thousandths and 15 thousandths of a degree centigrade by the year 2100. Mr. Chairman, that is such a small difference that you cannot measure. We don't have the measuring ability to discriminate at that level.

Now, I do not believe that a temperature difference of somewhere between 6 thousandths and 15 thousandths of a degree centigrade is going to make one iota of difference in any individual's health on this planet between now and the year 2100. However, I do believe that the additional cost incurred to reach that magnificent reduction is going to be felt by everybody on the planet to the tune estimated of somewhere in the neighborhood of \$7 trillion—7 tril-

lion.

To put that in perspective, the very first car that I bought in 1968 was a 1967 Ford Mustang. I bought it used for about \$1,600. Just the additional cost for tailpipe emissions on these various regulations are going to cost in the neighborhood of \$4,000 per car, cost more incrementally per car than the first car I bought, admittedly, a used car in 1968. It just doesn't make sense, Mr. Chairman. And hopefully, in the next Congress and perhaps even in this Congress, we can do something to forestall some of these regulations.

With that I yield back.

Mr. WHITFIELD. Thank you. At this time I recognize the ranking member of the full committee, Mr. Waxman of California, for an opening statement.

OPENING STATEMENT OF HON. HENRY A. WAXMAN, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF CALIFORNIA

Mr. WAXMAN. Mr. Chairman, today's hearing is no surprise, but it is deeply disappointing. The Republican majority is holding yet another hearing to condemn EPA action to reduce carbon pollution. Eighteen months into this Congress, the majority still denies the threat posed by climate change and recklessly rejects considering any action to address one of the gravest dangers facing the world

today.

When it comes to climate change, the Republicans are giving new meaning to the phrase, "just say no." Congressman Rush and I have written over 10 times to Chairman Upton and Chairman Whitfield urging them to hold hearings on new scientific findings about climate change. The chairmen have said no to hearings on the harm climate change poses to crop yields and the effects of ocean acidification. They have said no to hearings on the threat of methane releases and the shrinking time left for action. They have

said no to hearings on climate change reports issued by the International Energy Agency, the National Academy of Sciences, and the Vatican.

Instead of examining the science, House Republicans have voted that climate change does not exist, and they have voted 37 times on the House Floor of this Congress to block efforts to prevent climate change. The Republicans have also said no to clean energy, which would grow jobs and the economy. They have voted 45 times on the House Floor to block investments in clean energy and energy efficiency. The Republicans have voted against cleaner vehicles that saved consumers money at the pump and reduce Americans' dependence on oil. They have even voted against better incandescent light bulbs that produce exactly the same light with less energy and lower overall cost.

The House Republicans are trying to deny the laws of nature. They have voted to reject the most basic facts and scientific findings. They denied basic physics which finds that greenhouse gases trap heat. They denied decades of measurements showing steadily rising quantities of carbon dioxide in the atmosphere. They reject cutting-edge satellite readings showing rising temperatures. And they say they know more than the very best scientists at the preeminent scientific body in our Nation, the National Academies. And I guess that is why they are not invited to come and testify.

Just last week, we learned that the Republican legislators in North Carolina are moving a bill that forbids use of projected rates of sea level rise that are any higher than historical rates for the purposes of State planning. Can you imagine that? They are jeopardizing homes along their coast because accepting reality would

conflict with their political ideology.

The Republican Party has a choice. It could continue down the path of science denial and continue to pass bills, declaring that the sea won't rise, or it can stop denying the science and start grappling with how to respond to climate change. We have legitimate disagreements about the best response, but science denial is indefensible over the short-term and unsustainable over the long-term. Already, decades of inaction have locked in more warming and higher cost to respond. The longer we wait to say yes, the higher

the prices will be.

The price of this denial will be paid by the American entrepreneurs, workers, and communities that want to participate in the clean energy economy of the future. It will be paid by the small towns and large cities that have faced billions of dollars of infrastructure cost from seas that don't heed legislative commands. It will be paid by farmers with less productive crops and communities struggling with persistent droughts and raging wild fires. It will be paid by over a million species of animals and plants that may go extinct. The price of this denial will be paid by many generations to come, starting with our own children and grandchildren. This is worse than disappointing. It is shameful.

I yield back my time.

Mr. WHITFIELD. Gentleman yields back the balance of his time. At this time, are there any other opening statements? OK.

At this time, we welcome the first panel once again. And I will introduce all of you at this point. First of all, we have Mr. Robb

MacKie, who is the president and CEO of the American Bakers Association. We have Mr. Carl Shaffer, who is president of the Pennsylvania Farm Bureau. We have Mr. Charles Smith, who is the president and CEO of CountryMark Cooperative. We have Mr. Daniel Weiss, who is the senior fellow and director of Climate Strategy at the Center for American Progress. We have Dr. William Chameides. Would you pronounce it for me, Doctor?

Mr. Chameides. It is Chameides, but I am used to lots of dif-

ferent variations, as you might expect.
Mr. Whitfield. Chameides. OK. Well, we thank you for being here. And he is the dean at the Nicholas School of the Environment at Duke University. We have Dr. Louis Anthony Cox, who is the clinical professor of the Colorado School of Public Health and president of Cox Associates. And then we have Mr. Gerry Sweeney, who is the president and CEO of Rain CII Carbon.

So, once again, welcome to all of you. Each of you will be given 5 minutes to make an opening statement, and once we have concluded that then, the panel I am sure will have a lot of questions

for all of you.

So, Mr. MacKie, I will recognize you for your 5-minute opening statement. And I might just mention that on the table there are two little monitors there and, if it is working, a little red light will come on when your time has expired. So we don't expect you to end immediately, but if you would notice that periodically, that would be great.

So you are recognized, Mr. MacKie.

STATEMENTS OF ROBB MACKIE, PRESIDENT AND CHIEF EX-ECUTIVE OFFICER, AMERICAN BAKERS ASSOCIATION; CARL SHAFFER. PRESIDENT. PENNSYLVANIA FARM BUREAU. AND BOARD MEMBER, AMERICAN FARM BUREAU FEDERATION; CHARLES SMITH, PRESIDENT AND CHIEF EXECUTIVE OFFI-CER, COUNTRYMARK COOPERATIVE HOLDING CORPORA-TION; DANIEL J. WEISS, SENIOR FELLOW AND DIRECTOR OF CLIMATE STRATEGY, CENTER FOR AMERICAN PROGRESS ACTION FUND; WILLIAM L. CHAMEIDES, DEAN, NICHOLAS SCHOOL OF THE ENVIRONMENT, DUKE UNIVERSITY, AND VICE CHAIR, COMMITTEE ON AMERICA'S CLIMATE CHOICES, NATIONAL RESEARCH COUNCIL/NATIONAL ACADEMY OF SCIENCES; LOUIS ANTHONY COX, JR., CLINICAL PROFESSOR, COLORADO SCHOOL OF PUBLIC HEALTH, AND PRESIDENT, COX ASSOCIATES; AND GERRY SWEENEY, PRESIDENT AND CHIEF EXECUTIVE OFFICER, RAIN CII CARBON, LLC

STATEMENT OF ROBB MACKIE

Mr. Mackie. Great, thank you, Mr. Chairman, members of the subcommittee. Good morning and thank you for the opportunity to

be with you this morning.

My name is Robb MacKie, and I am president and CEO of the American Bakers Association. ABA is the voice of the wholesale baking industry in the United States. ABA advocates on behalf of more than 700 baking facilities and baking company suppliers nationwide. ABA members produce bread, rolls, crackers, bagels, sweet goods, tortillas, and many other wholesome, nutritious baked products for America's families. The baking industry generates

more than \$102 billion in economic activity annually, and we em-

ploy over 630,000 highly skilled employees in the industry.

I would like to share our industry's concerns regarding the EPA's Tailoring Rule and its impact on the baking industry. If the Clean Air Act CO2e trigger thresholds are lowered from 100,000 tons per year to 250 tons per year, many more bakeries will be subjected to expensive and unnecessary Title V requirements and Prevention of Significant Deterioration, or PSD, regulations. The cost to impacted

bakeries could be devastating.

Approximately 20 percent of baking industry is currently covered under Title V permits. Many bakers have accepted federally enforceable limits on production, otherwise known as Synthetic Minor Permits, to minimize their emissions and to avoid the cost and regulatory burden of the Title V permit program. If the potential CO2e emissions threshold is lowered to 250 tons per year, a much larger portion of the baking industry would be forced into the Title V process. This would needlessly increase compliance cost, seriously constrict bakers' ability to respond to market demand, and potentially require expensive controls on CO2 emissions despite the industry already relying upon clean natural gas for its ovens.

Importantly, EPA would likely state that its PSD regulations also cover so-called biogenic CO2 processes, including the natural fermentation of yeast from rising dough. In 2009, Administrator Jackson promised that the EPA would not regulate "every cow and Dunkin' Donuts," but that is exactly what would happen. Let me

explain in more detail.

There are three stages of the baking process. First, ingredients such as flour, sugar, yeast, and water are mixed together into dough. The dough is then allowed to rest in a proofing area where the yeast ferments sugars in the dough to create CO2 and ethanol that makes the dough rise. I can remember my grandmother getting very upset if I was running through the kitchen and disturbed her rising dough and cake in her kitchen. While the scale is different, the process is the same in a commercial bakery. After rising, the dough is then baked in a clean natural gas-fired oven at temperatures ranging from 180 to 200 degrees Fahrenheit.

Many bakery products, particularly breads and sweet goods, are made with yeast. Yeast is not an unpronounceable industrial chemical; it is a living, breathing organism that creates a natural chemical process. Yeast cells use food, moisture, warmth, and air to ferment and help the dough rise and create CO2 as a byproduct like

we do when we breathe.

Yeast is the most commonly used leavener in bread-making, and serves three main functions. First, CO2 production during yeast fermentation results in stretching and expansion of the dough, giving bread its characteristic open structure, as well as the nooks and crannies. Second, yeast fermentation strengthens the flour in the dough so it better captures and holds the CO2 that is produced. Finally, yeast fermentation provides the distinctive flavors, aromas, and texture that make baked products so appealing. As bread dough is baked, the CO2 that was produced by the yeast activity is released.

The emissions from yeast in bread production are extremely difficult to estimate. Any EPA rule that requires precise quantification will be technologically challenging and exceedingly expensive.

There are several reasons that the Clean Air Act is a poor fit for natural biological processes like yeast fermentation and bread-baking. First, bakers make a variety of products that have different levels of yeast. These products change seasonally and with customer demand. Second, protein levels of wheat change dramatically from year to year. If the wheat is low or high in protein, then the recipe must be adjusted to maintain the proper balance of flour and sugars. Third, there is no smokestack, so to speak, at which to measure fermentation emissions, but instead, bakers would have to use predictive models, altering the inputs every time the product type and recipe are modified. And, of course, expensive consultants and additional measuring equipment would be needed to accomplish these tasks.

In contrast to natural CO2 emissions, bakers can easily determine their fuel usage for ovens and their contribution toward the baker's CO2 emissions profile. But as mentioned, bakeries already use clean-burning natural gas. Carbon dioxide and water vapors are the by-products of efficient and clean combustion. While bakers continue to explore the cost and technical feasibility of cogeneration and other efficiency measures, it is difficult for the industry to find

"greener" ovens to bake product.

Lowering the Clean Air Act regulatory threshold would sweep many bakeries with considerable economic impacts. For purposes of illustration, a typical mid-sized bakery might have three production lines for bread and roll products. Each line would operate an average of 500 hours per month with an average production of 2,000 tons of product per month. This bakery would consume approximately 7 million cubic feet of natural gas per month with annual CO2e emissions just from the fuel alone of 4,500 tons per year, well over the 250-ton threshold but well below the current 100,000-ton threshold.

Under the revised Clean Air Act threshold, this bakery would now be subject to EPA's onerous PSD rules in under a month of operation. In terms of biogenic CO2, the emissions from natural yeast fermentation, the bakery could produce 37 tons of CO2 per month, thus trigger PSD review between 6 and 7 months of oper-

ation.

Bakeries are already subjected to excessive control technology costs for ethanol emissions, which is ironically also a natural product of yeast fermentation. To meet current Clean Air Act requirements, the cost to larger bakeries for adding a catalytic oxidizer on a bread/roll bakery oven got—

Mr. Whitfield. Mr. MacKie, you are about 2 minutes over.

Mr. MACKIE. Right.

Mr. WHITFIELD [continuing]. If you would conclude. Mr. MACKIE. I will do that. Sorry, Mr. Chairman.

The bottom line is the cost of any new overly broad rules that regulate natural, agriculture-related CO2 or clean natural gas used in baking ovens will ultimately force American families to pay more for their baked goods.

Appreciate the opportunity. I would be happy to answer any questions. [The prepared statement of Mr. MacKie follows:]

THE AMERICAN ENERGY INITIATIVE

The Bakers' Perspective
Testimony of Robb MacKie
President & CEO, American Bakers Association

June 19, 2012

American Bakers Association

The Voice of the Baking Industry Since 1897

1300 I Street, NW Suite 700 Washington, D.C. 20005 (202) 789-0300 www.americanbakers.org

STATEMENT OF ROBB MACKIE, PRESIDENT & CEO, AMERICAN BAKERS ASSOCIATION HOUSE ENERGY AND COMMERCE COMMITTEE SUBCOMMITTEE ON ENERGY AND POWER JUNE 19, 2012

Mr. Chairman, members of the Subcommittee. Good morning and thank you for the opportunity to be with you.

My name is Robb MacKie, and I am President and CEO of the American Bakers Association. ABA is the voice of the wholesale baking industry. ABA advocates on behalf of more than 700 baking facilities and baking company suppliers nationwide. ABA members produce bread, rolls, crackers, bagels, sweet goods, tortillas and many other wholesome, nutritious, baked products for America's families. The baking industry generates more than \$102 billion in economic activity annually and employs over 630,000 highly-skilled people.

Introduction

I would like to share our industry's concerns regarding the EPA's Tailoring Rule and its impact on the baking industry. If the Clean Air Act CO2e trigger thresholds are lowered from 100,000 tons per year to 250 tons, many more bakeries will be subject to expensive and unnecessary Title V requirements and prevention of significant deterioration (PSD) regulations. The costs to impacted bakeries could be economically devastating.

Approximately 20% of the baking industry currently has Title V permits. Many bakers have accepted federally enforceable limits on production (i.e., synthetic minor permits) to minimize their emissions and to avoid the cost and regulatory burden of the Title V permit program. If the potential CO2e emissions threshold is lowered to 250 tpy, a much larger portion of the baking industry could be forced into the Title V process. This would needlessly increase compliance costs, seriously constrict baker's ability to respond to market demand, and potentially require expensive controls on CO2 emissions despite the industry already relying upon clean natural gas for its ovens.

Importantly, EPA would likely take the position that its PSD regulations also cover so-called "biogenic" CO2 processes including the natural fermentation of yeast from rising dough. In 2009, Administrator Jackson promised that EPA would not regulate "every cow and Dunkin' Donuts," but that is exactly what would happen. Let me explain in more detail.

¹ http://www.nytimes.com/2009/10/01/science/earth/01epa.html? r=1&emc=eta1

Profile of a Typical Bakery

There are three stages of the baking process. First, ingredients such as flour, sugar, yeast and water are mixed together into dough. The dough is then allowed to "rest" in a proofing area where the yeast ferments sugars in the dough to create CO2 and ethanol that makes the dough rise. I remember my grandmother being very upset if I disturbed the rising bread or cake dough in her kitchen. While the scale is different, the process is the same in a commercial bakery. After rising, the dough is then baked in a clean natural gas fired oven at temperatures ranging from 180 to 200 degrees Fahrenheit.

Many bakery products, particularly breads and sweet goods, are made with yeast. Yeast is not an unpronounceable industrial chemical it is a living organism that creates a natural chemical process. Yeast cells, which are living organisms, use food, moisture, warmth and air to ferment and help the dough rise and create CO2 as a byproduct like we do when we breathe.

Yeast is the most commonly used leavener in bread making, and serves three main functions. First, CO2 production during yeast fermentation results in stretching and expansion of the dough, giving bread its characteristic open structure as well as nooks and crannies. Second, yeast fermentation strengthens the flour in the dough so that it better captures and holds the CO2 that is produced. Finally, yeast fermentation provides the distinctive flavors, aromas and texture that make baked products so appealing. As bread dough is baked, the CO2 that was produced by the yeast activity is released. This CO2 then enters the carbon cycle, where it becomes available to grow more wheat, sugar cane, sugar beets or corn, all of which provide the ingredients for the production of more bread.

The emissions from yeast in bread production are extremely difficult to estimate. Any EPA rule that requires precise quantification will be technologically challenging and exceedingly expensive. There are several reasons that the Clean Air Act is a poor fit for natural biological processes like yeast fermentation and bread baking. First,

bakers make a variety of products that have different levels of yeast. These products change seasonally and with customer demand. Second, weather affects emissions. The protein levels of wheat can change dramatically from year to year. If the wheat is low or high in protein, then the recipe must be adjusted to maintain the proper balance of flour and sugars. Third, there is no smokestack, so to speak, at which to measure fermentation emissions, but instead bakers would have to use predictive models, altering the inputs every time the product type and recipe are changed, and of course, expensive consultants and additional measuring equipment would be needed to accomplish these tasks.

In contrast to natural CO2 emissions, bakers can easily determine their fuel usage for ovens and their contribution towards the baker's CO2 emission profile. But as mentioned, bakeries already use clean-burning natural gas as fuel for the ovens and can't use windmills or solar panels. Carbon dioxide and water vapor are the products of efficient and clean combustion. While bakers continue to explore the cost and technical feasibility of cogeneration and other efficiency measures, it is difficult for the industry to find "greener" ovens to bake our products.

Impact of a 250-Ton CO2 Threshold

Lowering the Clean Air Act regulatory threshold would sweep in many bakeries with considerable economic impacts. For purposes of illustration, a typical mid-sized bakery might have 3 production lines for bread and roll products. Each line would operate an average of 500 hours per month with an average production of 2000 tons of product per month. This bakery would consume approximately 7,000,000 cubic feet of natural gas per month with annual CO2e emissions (from fuel use only) of 4,500 tons per year, well over the 250 ton threshold but well below the current 100,000 ton regulatory threshold. Thus under a revised Clean Air Act threshold, this bakery would be subject to EPA's onerous PSD rules in under a month of operation. In terms of biogenic CO2, the emissions from natural yeast fermentation, the bakery would produce 37 tons of CO2 per month, and thus trigger PSD review between 6 and 7 months of operation.

Bakeries are already subject to excessive control technology costs for ethanol emissions, which ironically is also a natural product of yeast fermentation. To meet current Clean Air Act requirements, the cost to larger bakeries for adding a catalytic oxidizer on a bread/roll bakery oven exhaust can be well in excess of \$500,000 (equipment & installation) plus \$150,000 to \$200,000 annually in operating expenses. The cost for completing the air permitting paperwork to control an oven can be up to \$50,000 depending on regulatory requirements of facility. So back to our mid-size baker, they are currently investing \$1.5 million dollars in capital investment to meet existing environmental requirements, before including CO2. EPA's additional requirements for fuel-related CO2, where bakers already use clean natural gas, and for biogenic CO2, which is essentially regulating nature, would add a whole new cost dimension. We know EPA's ill-defined Title V and PSD rules are already extremely difficult to work through.

Real Marketplace Impact

As much as bakers would love it, selling bakery products is not a steady, consistent business. In other words, bakeries can't predict how much product they will need to bake on an annual basis, a monthly basis and let alone a weekly basis. Consumer tastes, seasonal variations, and retailer demands vary. With a 250-ton threshold, even a small increase in market demand for baked products and associated increase in the use of yeast and fuel could trigger a "major modification" under the PSD program, with expensive consequences. Would our baker tell a retail grocer to "wait" on filling a hot dog bun order while he applied for a permit modification? What would he tell his part-time workforce that was brought in to fill a large order "we will be back in touch after the paperwork is complete?"

No one knows how expensive these EPA requirements would be, but as an example, in the case of regulating natural ethanol emissions from yeast, the cost of emissions controls that EPA and state environmental agencies have forced bakeries to consider have ranged up to as much as \$80,000 per ton. Contrast that to less than \$1,000 per ton that it costs to scrub out sulfur from coal-fired power plants and a mere \$80 per ton to dispose of

municipal garbage. EPA's Tailoring Rule would disproportionately impact the baking industry - both large and small bakers would be burdened in the midst of a weak economy.

Conclusion

Bakers have proactively increased efficiency, lowered energy use and continue to do so on a daily basis. Bakers continue to be challenged by a highly volatile commodity and energy market. The baking industry will surely feel the heavy downstream cost impacts of a climate change regulatory program on the different sectors of the American economy.

According to the U.S. EPA's own calculations, the food industry represents an insignificant portion of emissions that contribute to climate change. Using EPA's "Technical Support Document for Food Processing Facilities", one can calculate that emissions for the food processing industry (excluding emissions from on-site combustion of fuels) constituted less than two tenths of one percent (merely 0.159%) of net total emissions of CO2e, and emissions from the baking sector specifically are, in turn, only a fraction of overall emissions from the food processing industry sector. One might ask, why is EPA trying to regulate nature – the same aroma of bread baking that you love in your kitchen?

The bottom line is that the cost of any new overly broad rules that regulate natural, agriculture-related CO2 or clean natural gas used in baking ovens will ultimately force American families to pay more for baked goods. ABA thanks the subcommittee for taking up this important issue and asks Congress to give serious consideration to the impacts on the food sector in attempting to regulate such small amounts of emissions.

Thank you, I would be happy to answer any questions.

² Technical Support Document for Food Processing Facilities: Proposed Rule for Mandatory Report of Greenhouse Gases, Climate Change Division Office of Atmospheric Programs U.S. Environmental Protection Agency April 4, 2009.



December 28, 2009

EPA Docket Center
EPA West (Air Docket)
Attention Docket ID No. EPA-HQ-OAR-2009-0517
U.S. Environmental Protection Agency
Mailcode: 2822T
1200 Pennsylvania Ave., N.W.
Washington DC, 20460

Re: Docket ID No. EPA-HQ-OAR-2009-0517; Prevention of Significant Deterioration and Title V

Greenhouse Gas Tailoring Rule, Proposed Rule. 74 FR 55292

Dear Sir or Madam:

The American Bakers Association (ABA) is pleased to provide the following comments in response to the Environmental Protection Agency's (EPA) Prevention of Significant Deterioration (PSD) and Title V Greenhouse Gas Tailoring Rule, Proposed Rule. 74 FR 55292, October 27, 2009. Since 1897, the ABA has represented the interests of the baking industry before the U.S. Congress, federal agencies, state legislatures and international regulatory authorities. ABA advocates on behalf of over 200 companies, including baking companies and their suppliers, as well as yeast growers. ABA members produce bread, rolls, crackers, bagels, sweet goods, tortillas and many other wholesome, nutritious baked products for America's families. The baking industry generates over \$70 billion in economic activity annually and employs close to half a million highly skilled people.

ABA members, especially those operating small businesses, have a critical interest in the Agency's development of a carbon reduction program, particularly as it may affect their businesses. Our comments address three principal areas: First, we respond to the questions set forth by the Agency's small business outreach meeting that took place earlier this fall. Second our comments focus on biogenic emissions and their role in the baking industry as well as in a carbon control program, concluding that biogenic emissions of carbon dioxide may not be counted toward any threshold or significant level based on global warming potential. Third, we propose tht the Clean Air Act requires the PSD/NSR threshold for fluorinated refrigerants to be no lower than the statutory mass-based levels, and not based on carbon dioxide equivalent or global warming potential.

Impact of Climate Change to the Baking Industry

The ABA has begun looking more closely at the climate change issue and we believe we our industry could be impacted in this debate depending on what regulatory approach is used for climate change. As we learn about this issue and assess its potential impact to the baking industry, we believe it is important for EPA to consider the impact of its proposed rules for the implementation of a climate change program. In July 2008, the EPA published an Advanced Notice of Proposed Rulemaking (ANPR) entitled

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"Regulating Greenhouse Gas Emissions under the Clean Air Act." (73 Fed. Reg. 44,354) In that notice, the Agency acknowledged limitations of the current statutory structure that could cause regulatory burdens, including Title V permitting implications and preconstruction permits. Including greenhouse gases in the federal operating permit program, for example, will impose burdensome permitting requirements on previously unpermitted sources that neither Congress nor the states have found necessary to regulate to date. Through ABA's participation in the Food Industry Environmental Council (FIEC)¹ we submitted comments urging EPA to work with Congress to develop and enact a comprehensive amendment to the Clean Air Act that avoids the adverse consequences of these programs, while at the same time implementing an economy-wide greenhouse gas regulatory program that is well balanced and focused on the unique national and international challenges of greenhouse gas emissions. Those comments are attached.

EPA's PSD and Title V Impacts to Small Businesses

In the Agency's outreach to small businesses, it asked whether there are small business that would exceed the proposed 25,000 tpy of CO2e threshold. ABA has is aware of several businesses in the baking industry that may be impacted at the 25,000 tpy of CO2e. Although ABA has not undertaken any data collection efforts to make this showing, based on informal discussions, we would estimate that perhaps 20% of the baking industry has Title V permits. However, many bakers have accepted federally enforceable limits on production (i.e., synthetic minor permits) in order to minimize their emission impacts and avoid the cost and regulatory burden of the Title V permit program. If the Agency's final rule lowers the applicability threshold to the current statutory requirements of 250 tpy of potential CO2e emissions, a much larger portion of the baking industry will be adversely impacted by the PSD review requirements, since it will be impossible to limit such emissions by restricting hours of operation or production. Moreover, as discussed below, there are no readily available control technologies or fuel switching options that bakers could adopt to reduce greenhouse gas emissions. We do not believe that this would be an acceptable outcome and would create unnecessary administrative burdens and costs as well as capital costs on both the baking industry and the regulators. EPA's preamble also recognizes these challenges. 74 FR 55295.

Impact to Baking Industry's Costs

Over the past few years, ABA's membership has increasingly looked for means of improving sustainability and efficiency metrics by, among other things, evaluating and reassessing energy and water use and packaging processes. Implemented solutions have been viewed as voluntary sustainability initiatives, although we believe these efforts and early reductions should be credited, at the appropriate time, towards minimizing our energy and carbon footprint.

Recognizing that larger sources such as energy producers may be encouraged to seek "greener" options of meeting the nation's energy needs does lead to the consideration of alternatives by the baking industry.

¹ FIEC is a coalition of over sixty national food trade associations and companies that together represent more than 15,000 facilities across the country, employing approximately 1.5 million people. FIEC represents a large number of small- and medium-sized facilities nationwide

But, the potential of such alternatives to continue to have a significant impact on our industry's ability to bring cost effective products to the consumer market needs to also be considered. Most bakeries already use clean-burning natural gas as fuel for the ovens providing the necessary heat to bake our products. Carbon dioxide and water vapor are the products of efficient and clean combustion. While we continue to explore the cost and technical feasibility of co-generation and other efficiency measures, it is difficult for us to find "greener" ovens to bake our products. Renewable energy, such as wind power, cannot substitute for heating combustion fuels. Nor are control technologies available to reduce carbon content of fuels. Options such as carbon capture and sequestration are exceedingly cost-prohibitive and probably not economically or technically viable at bakeries given the relatively small amount of emissions. While there may be isolated opportunities to use low-carbon fuels from a few sources of biogas (such as livestock manure digesters), that biogas would have to be scrubbed to pipeline-quality and not contain contaminants that would impact food safety; thus, in the overwhelming majority of cases, fossil-fuel natural gas remains the only viable fuel option for most bakeries. If there are significant incremental energy, regulatory, and control technology costs to the baking industry, they will undoubtedly be difficult to absorb and we may be forced to pass increased costs along to the American consumer.

The baking industry, like other sectors of the food industry, has small profit margins and bakers have limited ability to quickly respond to changing feedstock and commodity pricing changes as we have already locked into certain pricing arrangements with our customers and suppliers for designated time periods usually lasting no shorter than six months. Despite low profit margins, we often absorb costs to minimize the impact to the consumer. This was demonstrated last year during the recent extremely volatile commodity market that resulted in many bakers' wheat prices increasing 173% in a short period of time. As commodity prices skyrocketed and without the ability to pass them on, bakers were forced to evaluate their employee structure and employee benefit levels. While poor global weather conditions, an uncertain economy, and increased demand for corn-based ethanol exacerbated this situation, EPA should consider all of the effects any new climate change regulatory program may have on the nation's economy and food supply.

Bakers have already sought ways to increase efficiency and lower energy use. ABA is also exploring ways in which to engage our supply chain on these critical issues. Yet we continue to be challenged as energy prices increase and the commodities market, while currently more stable, has been exceptionally volatile in the past year. The baking industry will likely feel the downstream cost impacts of a climate change regulatory program on the different sectors of the American economy. As noted, because we already use natural gas to heat our ovens and make the baked goods it will be difficult or impractical to transition to a "greener" energy.

The baking industry has a critical interest in the development of a carbon footprint reduction program, particularly as it may impact the sustainability of their businesses, and many bakers have already increased efficiency, minimized emissions through control technology such as catalytic oxidation, efficiency optimization, and upgraded delivery fleets. There is very little "fat" left to cut in the food processing industry. According to the U.S. EPA's own calculations, the food industry represents an insignificant portion of emissions that contribute to climate change. In its "Technical Support Document

for Food Processing Facilities," the U.S. EPA estimates that methane emissions from wastewater treatment and landfills in the entire food processing source category totaled merely 10.9 million metric tons CO2e per year. Taking the total nationwide net (sources and sinks) CO2e emissions in 2007 of 6,087.5 million MT CO2e, one can calculate that emissions for the food processing industry (excluding emissions from on-site combustion of fuels) constituted less than two tenths of one percent (merely 0.179%) of net total emissions, and emissions from the baking sector specifically are, in turn, only a fraction of overall emissions from the food processing industry sector. Emissions from clean-burning natural gas used in bakery ovens is a similarly de minimum portion of overall U.S. industrial emissions. EPA's climate change regulations should focus on significant greenhouse gas sources, not numerous small sources that would add to cost without achieving a corresponding benefit.

Accordingly, ABA supports the proposal to establish a PSD/NSR threshold and significance level higher than the nominal statutory limits for other gases such as sulfur dioxide or VOCs. However, ABA also believes that the thresholds should be substantially higher (at least 50,000 tpy) for fuel combustion uses that have no economical alternative. ABA also believes that EPA has the discretion to exempt small industrial sectors such as baking from any PSD/NSR threshold, and EPA should do so in light of the de minimus emissions from the baking sector.

Similarly, ABA strongly believes that the significance level for modifications should be set at the highest possible level, and at the upper end of the proposed range (i.e., 25,000 tons per year).

Biogenic Emissions Under an EPA Climate Change Program

Of the relatively small emissions from the baking sector, an even smaller part consists of organic "biogenic" carbon dioxide emissions from the natural process of yeast fermentation. As discussed in more detail below, the EPA should exempt from any regulatory greenhouse gas requirements those CO2e emissions that arise directly from biogenic sources such as yeast activity and dough fermentation.

Biogenic Emissions from Living Organisms (e.g., Yeast) and Their Processes (e.g., Dough Fermentation) Should Not Be Counted Toward Regulatory Obligations.

Many bakery products, particularly foods that rise such as bread and sweet goods, are made with yeast. Yeasts are single-celled fungi (living organisms) that need food, moisture, warmth, and air to survive and grow. Yeast cells digest sugar, their appropriate food source, in a natural biological process known as fermentation, during which energy is released to the organisms and CO₂ is formed as a byproduct. Various forms of sugars can be utilized by yeasts, including sucrose (beet or cane sugar, corn syrup), fructose and glucose (found in honey, molasses, maple syrup and fruit), and maltose (derived from starch in flour). In addition to bakery products, many other foods and beverages are produced through involvement of yeast fermentation processes. These include items such as beer, wine, vinegar, cocoa, chocolate, cheese, fermented milk and meat products.

² Accordingly, the ABA believes that the food processing sector, and certainly the baking sector, ought to be excluded entirely as covered facilities under a cap-and-trade regime. However, this paper only addresses an exemption for organic biogenic emissions from baking bread and other yeast-based foods.

Yeast is the most commonly used leavener in bread making, and it serves three main functions in this process. First, CO₂ production during yeast fermentation results in stretching and expansion of the dough leading to the characteristic open structure of the final bread product. Second, other natural chemical activities that occur during yeast fermentation contribute to dough development by strengthening the flour in the dough so that it better captures and holds the CO₂ that is produced. Finally, yeast fermentation provides distinctive flavors, aromas and texture to baked goods. As bread dough is baked, the CO₂ that was produced through yeast activity is released from the bread. This CO₂ then enters the carbon cycle, where it becomes available to plants (including sugar cane, beets or corn from which more sugar for future yeast fermentation processes is produced) for use in their photosynthesis activities.³

Accordingly, in a life-cycle analysis, any emissions from yeast fermentation during bread making are carbon-neutral and should not be counted as industrial emissions for purposes of regulating greenhouse gases under the Clean Air Act, or in a cap-and-trade system whether under existing Clean Air Act authority or new federal legislation. Indeed, this emission of CO₂ is similar to that resulting from the natural respiration of animals, including livestock and humans, which is not considered a covered entity under the pending cap-and-trade proposals in Congress. Further, fermentation emissions of CO₂ from baking are also similar to enteric fermentation in animals which produces emissions from dairy cows and which is provided an express exemption in Congressional climate bills.

If incorrectly crafted, a greenhouse gas regulatory program could significant impact to the baking industry. Bakers are already face significant impact by the regulatory schemes that are under consideration by the Agency for the utility sector by imposing "indirect costs" - increases in the prices of electricity, natural gas fuel, and ingredients such as flour and sugar, as well as increasing construction costs for new facilities or expansions. Imposing additional costs for direct emissions of CO₂from natural biological processes would significantly add to that expense for larger bakeries and yeast producers. While passing on costs to consumers is a last resort, bakers will need to look internally to determine

³ Baking Science & Technology, Volume 1, 4th edition, E.J. Pyler and L.A. Gorton, Sosland Publishing Co., Kansas City, MO, 2008. Yeasts in Food: Beneficial and Detrimental Aspects, T. Boekhout and V. Robert, editors, CRC Press, Boca Raton, 2003. Yeast Technology, 2nd Edition. G. Reed and T.W. Nagodawithana, Van Nostrand Reinhold, New York, 1991.

⁴ Biogenic emissions are not considered net emissions for purposes of greenhouse gas inventory and regulation. The Revised 1996 IPCC Guidelines for National Greenhouse Gas Inventories: Reference Manual Section 2.1 states that "CO2 from use of biological carbon as leedstock and fermentation processes should not be reported under Industrial Processes or any other sector of the IPCC Guidelines if they originate from sources of carbon that are from a closed cycle." The 1997 UNFCCC COP3 (Kyoto Protocol) realfirmed that the Revised 1996 IPCC Guidelines for National Greenhouse Gas Inventories should be used as "methodologies for estimating anthropogenic emissions by sources and removals by sinks of greenhouse gases" in calculation of legally-binding targets during the first commitment period. Similarly, in the case of biogenic fuels combustion, the EPA's 1990-2006 Greenhouse Gas Inventory states, "fuels with biogenic origins are assumed to result in no net CO2 emissions to

⁵ However, CO2 from baking has a lower global warming potential than methane emissions from enteric fermentation.

⁶ For example, American Clean Energy and Security Act, H.R. 2454 (ACESA), proposed Clean Air Act title VIII section 811(a)(1)(B).

where they can become leaner, which in the current economic times could regrettably mean loss of jobs and plant closures. Even the European Union, which is widely viewed as aggressive in its regulatory burdens, has understood that climate regulation is not appropriate for the baking, and other food and agricultural sectors. The U.S. certainly need not go further than the Europeans in imposing emissions restrictions.

Proposed Metric for PSD and Title V Thresholds Relative to Industrial Refrigerants EPA has solicited comment on the question of whether facilities that emit very small amounts (on a mass basis) of high-global warming potential (GWP) gases should be deemed to trigger PSD and Title V if emissions fall below the statutory 100/250 tpy limits, yet exceed on a GWP potential the proposed 25,000 tpy threshold. 74 Fed. Reg. at 55330. The baking industry makes extensive use of refrigeration to preserve its products for transport and sale. Use of fluorocarbon refrigerants, including those with high GWP, are already strictly regulated under EPA's anti-venting rules under Section 608 the Clean Air Act. Accordingly, it is unclear that EPA would have legal authority to separately regulate refrigerants used at food processing facilities as greenhouse gases. In any event, ABA strongly believes that the statutory mass-based thresholds of 100/250 tpy must continue to apply even if EPA raises the GWP-based threshold to 25,000 tpy CO2e through its Tailoring approach. Facilities that emit less than the 100/250 tpy threshold amounts on a mass-basis should not be considered to trigger NSR/PSD. Subject to the caveats stated above, ABA does support establishing a significance threshold for modifications at a level above 0 and preferably at 25,000 tpy, as proposed by EPA.

Conclusion

Thank you again for this opportunity to provide suggestions for improvement of the Agency's proposed Prevention of Significant Deterioration and Title V Greenhouse Gas Tailoring Rule. The American Bakers Association would be pleased to follow-up with the Agency to discuss our concerns in greater detail. In the meantime if you have any questions, please contact me at 202-789-0300 or via email at ravaners@americanbakers.org.

Sincerely,

Rasma I. Zvaners Policy Director

⁷ The European Emission Trading Scheme (ETS) covers emissions, which are defined as greenhouse gases (e.g., CO2), from sources in an installation. An "installation" is defined as a stationary unit where one or more of certain "activities" (listed in Annex 1) are carried out. If a facility in the EU operates a combustion installation with a rated thermal input exceeding 20 MW, then it is deemed to be performing an energy activity, and they would thus need an allowance for each tons of CO2 emitted from the installation carrying out that activity. Annex 1 does not list years production process (i.e., fermentation).

TEL: 703/821-0770 • FAX: 703/821-1350

November 25, 2008

The Honorable Stephen A. Johnson Administrator U.S. Environmental Protection Agency 1200 Pennsylvania Avenue, N.W. Washington, DC 20460

Re: Food Industry Environmental Council Comments on the Advance Notice of Proposed Rulemaking "Regulating Greenhouse Gas Emissions under the Clean Air Act," Docket ID No. EPA-HO-OAR-2008-0318

Dear Administrator Johnson:

The Food Industry Environmental Council ("FIEC") is pleased to submit these comments to EPA's Advance Notice of Proposed Rulemaking "Regulating Greenhouse Gas Emissions under the Clean Air Act," published in the Federal Register on July 30, 2008. FIEC is a coalition of over sixty national food trade associations and companies that together represent more than 15,000 facilities across the country, employing approximately 1.5 million people. FIEC represents a large number of small- and medium-sized facilities nationwide that would be affected adversely by a Clean Air Act-based climate change regulatory system that did not carefully distinguish between significant and small sources of greenhouse gases. As a result, FIEC respectfully recommends that EPA first look to a legislative solution to the difficult issue of climate change, and if a regulatory approach is unavoidable, that it be crafted in such a way so as to avoid significant adverse effects on the cost of food in the United States.

¹ See Regulating Greenhouse Gas Emissions under the Clean Air Act, 73 Fed. Reg. 44,354 (advance notice of proposed rulemaking Jul. 30, 2008) [hereinafter "GHG ANPRM"].

1. Summary of Comments

No one seriously disputes that the Clean Air Act² is ill-suited to regulate greenhouse gases ("GHGs") in the United States.³ Indeed, for almost four decades, the Act's primary system of achieving and maintaining healthy concentrations of ambient air through air quality planning has centered on the criteria pollutants initially established in 1971⁴ and the one additional criteria pollutant added in 1976.⁵ When it has been necessary to expand the scope of the original 1970 Act, Congress has done so by amending the Act. For example, Congress added hazardous air pollutants, ozone depleting substances regulated under the Montreal Protocol,⁶ and an acid rain regulatory program to the Act in 1990. Even though—as the Supreme Court pointed out in *Massachusetts v. EPA* ⁷—the Act's definition of "air pollutant" is "capacious," the fact is that the unamended structure of the Act is not well-suited to the regulation of globally-significant pollutants like GHGs.

EPA acknowledges the inherent limitations of the Act in the GHG ANPRM. The listing of GHGs as a criteria pollutant—with the resulting establishment of primary and/or secondary National Ambient Air Quality Standards for GHGs—will expand the scope of the Act far beyond our current experience. Promulgating standards of performance for categorical sources of GHG emissions will result in a command-and-control framework—perhaps tempered by market-based mechanisms—that will be heavy on "command" and very light

² 42 U.S.C. §§ 7601–7671g (2008) [hereinafter, "the Act"].

³ Accord GHG ANPRM at 44,397 ("These complexities reflect that the CAA was not specifically designed to address GHGs..." and "EPA does not believe that all aspects of the Act are well designed for establishing the kind of comprehensive GHG regulatory program that could most efficiently achieve the GHG emission reductions that may be needed over the next several decades.").

⁴ See 36 Fed. Reg. 8186 (1971) and 36 Fed. Reg. 22,384 (1971).

⁵ See 41 Fed. Reg. 14,921 (1976).

⁶ We note with particular emphasis that the only truly global air quality regulatory structure—the Montreal Protocol—required the enactment of Title VI to the Act. We would similarly expect to see a statutory amendment to address the global question of climate change.

⁷ 549 U.S. 497 (2007).

on currently-available controls. Including GHGs in the federal preconstruction permitting program (for both attainment and nonattainment areas) will extend preconstruction permitting requirements to thousands of additional sources—many of them quite small—and will undoubtedly create significant regulatory and litigation-related hurdles to constructing, operating, and maintaining businesses that are important to our economy. Likewise, including GHG major sources in the federal operating permit program will impose operating permitting requirements on hundreds of thousands of previously unpermitted sources that neither Congress nor the states have heretofore found necessary to regulate. For these reasons, we strongly urge EPA to work with Congress to develop and enact a comprehensive amendment to the Clean Air Act that avoids the adverse consequences of these programs, while at the same time implements an economy-wide GHG regulatory program that is wellbalanced and focused on the unique national and international challenges of GHG emissions.

To the extent that Congress does not act, we have developed innovative solutions to the worst of these adverse consequences, and strongly urge EPA to consider these solutions in any proposed GHG rulemaking. As explained in greater detail below, we have taken as an operative assumption that EPA will eventually make an endangerment finding under Section 202. EPA may largely avert the significant adverse unintended consequences of that finding on other Clean Air Act programs by considering the following two-part approach.

First, we recommend that EPA focus its regulatory energy on the largest categorical sources of GHGs in the United States. Using Section 111, EPA could develop a nationwide cap-and-trade program for GHGs as a standard of performance covering up to half of U.S. stationary source emissions of GHGs. At the same time, EPA could adopt new motor vehicle emission standards under Section 202, and possibly include transportation fuel producers in a Section 211-based cap-and-trade program. This approach would cover up to eighty percent of national GHG emissions, while leaving the remaining twenty percent subject to Section 111 regulation only as necessary,

⁸ See infra Section 2.B.

and as new technological innovations make it cost-effective to control smaller sources of GHGs.

Second, to avoid cost-ineffective and unnecessary regulation of the large number of smaller sources contributing to the bottom twenty percent of GHG emissions, EPA must not include GHGs in the air quality planning program, in the preconstruction permit program, or in the operating permit program. We believe that the express language of Section 108 provides EPA with the discretion not to list GHGs as a criteria pollutant, in large measure because implementation of GHG primary and secondary NAAQS will be legally and factually impossible. We also believe that EPA can minimize the applicability of the preconstruction permitting program by refining its definition of "regulated NSR pollutant" to include *only* those pollutants specifically regulated at a Section 111 source, and only to the extent the pollutants are emitted from a Section 111 source. 10 Similarly, we believe EPA can extend this refined definition to the operating permit program, which currently uses the definition of "regulated NSR pollutant" to determine whether a source is a major source of air pollutants under Title V.11

The bases for our recommendations are set forth in more detail below.

2. Comments on the GHG ANPRM

In light of the significant problems associated with regulating GHGs under the Clean Air Act, we strongly urge EPA to work cooperatively with Congress to enact economy-wide, comprehensive climate change legislation. Failing that preferred outcome, we make the following observations and recommendations.

⁹ See infra Section 2.A(2).

¹⁰ See infra Section 2.C(2).

¹¹ See infra Section 2.D(2).

A. EPA should not list GHGs as a criteria pollutant

(1) Impact of GHG criteria pollutant listing on the Food Industry

Many FIEC members' facilities are not major stationary sources and have not historically been subject to criteria-pollutant-based air quality planning requirements. As a result, these facilities are often ill-equipped for the sophisticated requirements of air quality planning. Further, the significant impact this regulatory scheme would have on smaller businesses—which are even less equipped to handle the types of capital cost and administrative resources necessary—would be devastating in an already faltering economy. Similarly, many state regulatory bodies are not sufficiently staffed to handle the large volume of additional air quality permitting work that would be required if GHGs were listed as a criteria pollutant. For the reasons set forth in more detail below, FIEC respectfully urges EPA not to list GHGs as a criteria pollutant.

(2) EPA is not required to list GHGs as a criteria pollutant

EPA has the discretion not to list GHGs as a criteria pollutant under Section 108, even if the agency has made an endangerment finding under another provision of the Act. Section 108(a)(1) states:

For the purpose of establishing national primary and secondary ambient air quality standards, the Administrator shall . . . publish, and shall from time to time thereafter revise, a list which includes each air pollutant—

- (A) emissions of which, in his judgment, cause or contribute to air pollution which may reasonably be anticipated to endanger public health or welfare;
- (B) the presence of which in the ambient air results from numerous or diverse mobile or stationary sources; and
- (C) for which air quality criteria had not been issued before December 31, 1970, but for which he plans to issue air quality criteria under this section. 12

¹² 42 U.S.C. § 7608(a)(1)(A)–(C) (2008).

These express statutory terms provide EPA with four distinct grounds upon which it may exercise discretion in criteria pollutant listing decisions.

First, under Section 108(a)(1)(A) EPA has discretion with respect to whether an air pollutant endangers public health or welfare. Second, under Section 108(a)(1)(B) EPA has discretion with respect to determining whether the air pollutant in question results from sufficiently numerous or diverse sources. For purposes of this comment, we assume that EPA will exercise its discretion to find that GHGs endanger public health and welfare, and that GHGs result from sufficiently numerous or diverse sources.

Third, under Section 108(a)(1)(C) we believe EPA has the discretion to list as criteria pollutants only those air pollutants for which it plans to issue air quality criteria. The breadth of this discretion was at issue in NRDC v. Train, 13 a proceeding to determine whether EPA would be required to list lead as a criteria pollutant. Both the district court 14 and the Second Circuit 15 held that EPA's discretion was limited to Section 108(a)(1)(A) and (B), and that beyond the listing of the first five criteria pollutants in 1971, Section 108(a)(1)(C) was meaningless. 16 But as EPA pointed out in the GHG ANPRM, ¹⁷ the NRDC decisions were rendered prior to the Supreme Court's decision in Chevron v. NRDC, which entitles EPA to broad deference in questions of interpreting ambiguous provisions in statutes under its particular expertise. 18 We believe that the scope of Section 108(a)(1)(C) is ambiguous in many respects, and that a reassertion by EPA that the section has meaning would be entitled to deference. 19 We urge EPA to reassert that Section 108(a)(1)(C)

¹³ 411 F. Supp. 864 (S.D.N.Y.), aff'd, 545 F.2d 320 (2d Cir. 1976).

¹⁴ See NRDC, 411 F. Supp. at 868.

¹⁵ See NRDC, 545 F.2d at 325.

¹⁶ The Second Circuit noted that giving EPA such broad discretion through Section 108(a)(1)(C) would render the other two conditions meaningless. *See id.* at 324–25.

¹⁷ See GHG ANPRM at 44,477 n.229.

¹⁸ See generally Chevron v. NRDC, 467 U.S. 837 (1984).

¹⁹ Indeed, EPA has in at least two categorical instances *not* listed air pollutants that may otherwise meet the first two conditions of Section 108(a)(1): hazardous

retains meaning, and that it provides EPA with sufficient discretion to decline to list GHGs as a criteria pollutant.²⁰

Fourth and most importantly, all of the conditions of Section 108(a)(1) are predicated on a single purpose: "establishing national primary and secondary ambient air quality standards." To the extent that it is legally or factually impossible—despite meeting the conditions of Section 108(a)(1)(A) and (B)—to establish ambient air quality standards for an air pollutant, we assert that EPA may not list the pollutant under Section 108(a)(1). The district court in *NRDC v. Train* supports this notion of "impossibility." The court stated:

The statute appears to assume that, for each pollutant which must be listed, criteria and a national standard can be established. A twelve month period is provided for that purpose. However, Congress cannot require the impossible. It may be that a pollutant exists which meets the listing requirements of [Section] 108 but for which no criteria or national standard is possible.²¹

GHGs are those pollutants. We have discerned at least four reasons why a national ambient air quality standard for GHGs would be impossible to attain and therefore futile to promulgate.

air pollutants and ozone depleting substances. This negative inference supports the notion that EPA retains discretion to list as criteria pollutants only those air pollutants for which EPA intends to promulgate air quality criteria.

²⁰ The preliminary phrase in Section 108(a) "and from time to time revise" applies on its face to each of the three conditions that follow. Courts disfavor interpretations that render a portion of a statute meaningless. *See Duncan v. Walker*, 533 U.S. 167, 174 (2001) ("We are thus 'reluctan[t] to treat statutory terms as surplusage' in any setting." quoting *Babbitt v. Sweet Home Chapter, Communities for a Great Ore.*, 515 U.S. 687, 698 (1995)).

²¹ NRDC, 411 F. Supp. at 870; see also 1 ENVT'L L. (West) § 3:7 n.6 (describing the NRDC district court opinion as "leaving open the question of whether a claim of impossibility might excuse the obligation to establish standards"). The district court distinguished air quality criteria that may be "technically infeasible" or for which EPA lacks data to support at the time of listing from those air quality criteria for which promulgation would be impossible. See NRDC, 411 F. Supp. at 870 n.9 and accompanying text.

- First, EPA states the distribution of GHG concentrations is relatively even around the world, leading to the fact that local GHG air quality is simply not dependent on local emissions. Because the Clean Air Act's air quality planning structure is based on the control of local emissions leading to local—or at most regional—air quality improvements, the global nature of GHG concentrations makes efficacious implementation of air quality planning impossible.
- Second, EPA notes that global GHG concentrations from other countries have impacts on the United States that are simply not redressible through local (or national) air pollution controls.²³ Assuming that GHG emissions were cut to zero in the United States, the effect of other countries' GHG emissions would make it factually impossible for the United States alone to achieve GHG air quality standards.
- Third, the global nature of the GHG issue undercuts the "cooperative federalism" of the Clean Air Act under which primary responsibility for air quality planning program belongs to state, tribal, or local government. That is, the entire operative structure of the Act's air quality planning reflects the premise that local government can effectively improve local (or regional) air quality. For GHGs, that is simply not the case, and including a GHG air quality standard in the air quality planning process is structurally at odds with the Clean Air Act and is therefore legally impossible to implement.
- Last, EPA describes as an "inescapable conclusion" that the statutory ten-year horizon for attaining a primary GHG air quality standard would be "ill-suited" for GHGs. Given the international contributions to and the spatial distribution and

²² See GHG ANPRM at 44,401 ("Unlike most traditional air pollutants, GHGs become well mixed throughout the global atmosphere so that the long-term distribution of GHG concentrations is not dependent on local emission sources.").

²³ See id. ("As a result of this global mixing, GHGs emitted anywhere in the world affect climate everywhere in the world. U.S. GHG emissions have climatic effects not only in the U.S., but in all parts of the world, and GHG emissions from other countries have climatic effects in the U.S.").

²⁴ See id. at 44,408.

long lifetimes of GHGs, it is "inescapable" that nationwide sanctions would be imposed as a result of localities having failed to meet the (impossible) task of reducing GHG concentrations below the air quality standard.²⁵

In light of these four examples of legal and factual impossibility of achieving and maintaining a GHG air quality standard, we assert that Section 108(a)(1) does not require EPA to list GHGs as a criteria pollutant.

B. EPA should develop a national cap-and-trade program under Section 111 for the top half of stationary GHG emission sources

Section 111 of the Act authorizes EPA to publish a list of categories of stationary sources of air pollution. EPA must list a category of sources "if in [its] judgment it causes, or contributes significantly to, air pollution which may reasonably be anticipated to endanger public health or welfare." ²⁶ Section 111's use of a "contributes significantly to" condition is quite different from many other endangerment standards under the Act, most of which include the requirement that the emissions "in [EPA's] judgment cause, or contribute to, air pollution which may reasonably be anticipated to endanger public health or welfare." 27 We believe that this "contributes significantly to" language gives EPA wide discretion to list only those categories of sources that make the largest contribution to GHG emissions in the United States, in the same way EPA has historically regulated some—but not all—categories of stationary sources of other pollutants. According to EPA's National GHG inventory, the top ten categorical sources produce half of the nation's GHG emissions.²⁸ Assuming that EPA regulates under Title II the thirty percent contribution to national GHG emissions from the

²⁵ See id. at 44,481.

²⁶ 42 U.S.C. § 7611(b)(1)(A).

 $^{^{27}}$ See id. at 44,418–19 (describing the various endangerment standards throughout the Act).

²⁸ See EPA, INVENTORY OF U.S. GREENHOUSE GAS EMISSIONS AND SINKS: 1990–2006 at ES-5–ES-6 (2008), available at http://www.epa.gov/climatechange/emissions/usinventoryreport.html.

transportation sector, over eighty percent of stationary and mobile GHG sources would fall under regulation by EPA.

We agree with EPA that the definition of "standard of performance" under Section 111 could—and in fact, should—be expanded to include a market-based system of regulation. Using the Clean Air Act's Acid Rain Program, the Kyoto Protocol, the European Trading System, and the Regional Greenhouse Gas Initiative ²⁹ as examples of market-based cap-and-trade programs for GHGs, we believe that EPA can craft a cap-and-trade program that will effectively and cost-efficiently control the top categories of GHG stationary sources.

We urge EPA to define a cap-and-trade standard of performance that contains the following elements. First, GHG allowances should be tradeable between all Section 111 sources. Standards of performance defined to apply only to sources within an individual source category would introduce significant market inefficiencies, especially as the number of sources in a category or the extent of their emissions decreased. Second, the standard of performance should allow for the use of domestic and international offsets created by GHG reductions at non-categorical sources. Assuming that EPA correctly addresses the question of additionality, offsets would allow extra-categorical sources to reduce emissions where economically feasible without subjecting all extra-categorical sources to a Section 111 standard. Because GHG emissions impacts are global in nature, EPA should remain indifferent to the location of the GHG emission reduction. Through a cap-and-trade standard of performance, EPA could effectively focus its regulatory efforts on the largest contributors of GHG emissions in the United States, avoid ineffective and inefficient regulatory requirements at smaller sources, and create market incentives to reduce GHGs at a wide variety of domestic and international sources.

In summary, we believe that a Clean Air Act-driven GHG regulatory program should focus on categorical sources representing

²⁹ Though currently either vacated on other grounds or suspended pending final judicial disposition, the Clean Air Mercury Rule and the Clean Air Interstate Rule are additional examples of the use of market-based cap-and-trade programs under the provisions of the Clean Air Act.

the highest percentage of GHG emissions in the United States, and provide creative, flexible, multi-sectoral opportunities for regulated sources to reduce their GHG footprints effectively and cost-efficiently.

C. EPA should not regulate all GHG sources under the federal preconstruction permit program

(1) Impact of preconstruction permit review on the Food Industry

Regulating thousands more sources under a preconstruction permit program would result in an extraordinarily inefficient regulatory program and would undoubtedly slow the development of new means of production in the U.S. economy. As a result, we strongly urge EPA not to include GHG sources that are not otherwise regulated under Section 111 in a preconstruction permit program. The fact that EPA has few options available to it to avoid or mitigate the impact of a preconstruction permit program on thousands of additional sources is further evidence that a legislative solution to the challenge of climate change is necessary.

(2) EPA has discretion to include only GHG emissions from Section 111 sources in the preconstruction permit program

If no climate change legislation is forthcoming, we suggest that EPA decline to impose a preconstruction permit program on small sources using one of the following two methods.

First, the federal preconstruction permitting program regulates only sources that emit a "pollutant subject to regulation." EPA takes the position that the phrase "pollutant subject to regulation" is inherently ambiguous, and is therefore subject to EPA interpretation. And at least one adjudicative body has agreed with EPA. EPA's most recent formal definition of the phrase states that a "regulated NSR pollutant" includes, among other things, "[a]ny pollutant that is

³⁰ See 42 U.S.C. § 7475(a)(4).

³¹ See In re Deseret Power Electric Cooperative, PSD App. No. 07-03, slip op. at 28–29, (Envt'l App. Bd. Nov. 13, 2008).

³² See id. at 29.

subject to any standard promulgated under section 111 of the Act."33 At first glance, this definition would appear to cover all GHGs if any GHG sources are regulated under a Section 111 standard. However, we believe that EPA can exercise its discretion to define "regulated NSR pollutant" further to include only those GHGs that are specifically regulated at a Section 111 source, and only to the extent the GHGs are emitted from regulated source categories. 34 For example, if EPA promulgated a GHG standard of performance for coal-fired boilers, the "regulated NSR pollutant" would only be GHGs emitted at the coal-fired boilers covered by the standard, and not GHGs emitted by other sources not subject to the standard. In this way, EPA and others could focus their permitting and enforcement resources on the largest and most significant sources of GHGs, without inefficiently (and largely ineffectively) requiring smaller sources to comply with the burdensome preconstruction permit requirements.35

Second, even if the definition of "regulated NSR pollutant" were not modified, EPA has in the past exercised its discretion to not impose preconstruction permitting requirements at facilities emitting more than *de minimis* amounts of a regulated NSR pollutant. For example, in a 1998 guidance document that still informs the permitting of new sources, EPA concluded that CFCs—though technically listed as a regulated NSR pollutant—did not have to be included in a source's NSR analysis.³⁶ Similarly, EPA could declare

³³ 67 Fed. Reg. 80,186, 80,240 (2002).

³⁴ Instead of amending the PSD regulations—and as outlined below, the Title V regulations—EPA could state as it promulgated each new source performance standard that only those pollutants emitted by sources subject to the standard of performance are defined as a "regulated pollutant." This approach would leave intact EPA's current approach to non-GHG regulated pollutants.

³⁵ If EPA lists GHGs as a criteria pollutant, its discretion to exempt GHGs from regulation as a "regulated NSR pollutant" is severely constrained. This is another reason why we urge EPA *not* to list GHGs as a criteria pollutant.

³⁶ See Letter from John S. Seitz to Kevin Tubbs (Mar. 19, 1998), available at www.epa.gov/Region7/programs/artd/air/nsr/nsrmemos/rfrigrnt.pdf.

that GHGs need not be regulated in practice as a part of a source's preconstruction review.³⁷

In summary, we believe that EPA has sufficient discretion to exclude GHGs from regulation under the new source review program through either a refined definition of "regulated NSR pollutant" or by simply not regulating GHGs in permitting practice.

D. EPA should not regulate all GHG sources under the federal operating permit program

(1) Impact of Title V permitting on the Food Industry

Including all major sources of GHG in the Title V permit program would impose an extraordinary regulatory burden on more than half a million sources not otherwise subject to Title V, with very little substantive improvement in the nation's carbon footprint. Many FIEC members' facilities qualify as natural or synthetic minor sources under Title V, a characterization that would be lost if all GHGs were included in the program. Triggering these permitting requirements—designed not to add substantive requirements to affected sources—would impose a significant cost to FIEC members, for little if any GHG-related benefit. Most particularly, the administrative costs associated with the operating permit program and the inevitable burdensomeness of securing permits from underfunded state permitting authorities will adversely impact the food industry. For the reasons described more fully below, FIEC respectfully recommends that EPA not include all GHG sources in the Title V program.

(2) EPA has the discretion to include only GHG emissions from Section 111 sources in the operating permit program

Section 502 states that "it shall be unlawful for any person . . . to operate . . . a major source . . . except in compliance with a permit issued by a permitting authority under this subchapter." A "major source" is defined by Sections 501(1) and 302(j) as "a stationary facility or source of air pollutants which directly emits, or has the potential to emit, one hundred tons per year or more of any air

³⁷ The obvious difficulties with this position and the inevitable opposition it would engender are further evidences that EPA should support climate change legislation.

pollutant." EPA has estimated that up to 550,000 stationary sources would emit one hundred tons per year or more of GHGs.

EPA, however, has asserted that it has discretion to interpret the meaning of "any air pollutant" in Section 302 so as to exclude those pollutants that are not subject to regulation under the Act. In 1993, the Deputy Director of EPA's Office of Air Quality Planning and Standards concluded that Congress did not intend that "any air pollutant" be interpreted as "all air pollutants," but as "any air pollutant subject to regulation under the Act." Otherwise, EPA noted, "a variety of sources that have no known prospect for future regulation under the Act would nonetheless be classified as major sources and be required to apply for title V permits." As a result, EPA interpreted the definition of "major source" under Title V to include sources that emitted or had the potential to emit one hundred pounds or more of "pollutants subject to regulation under the Act."

EPA could apply the same interpretation of "subject to regulation under the Act" as we suggested in the preconstruction review section above. That is, only those GHGs emitted from sources that are themselves subject to regulation would count towards major source status. If EPA imposes only Section 111 standards of performance on sources, only the pollutants at those covered Section 111 sources would be subject to Title V permitting. The fact is that most of those sources are already major sources for other pollutants, and the Title V program would not be greatly expanded using this approach.⁴¹

If EPA declines this approach, then we support the GHG ANPRM suggestions that EPA institute a general permit program to

³⁸ See Memorandum from Lydia N. Wegman to Air Division Directors, Regions I–X at 4–5 (Apr. 26, 1993), available at www.epa.gov/ttn/caaa/t5/memoranda/rapdef.pdf.

³⁹ *Id.* at 4.

⁴⁰ Id.

⁴¹ This approach is not inconsistent with the other regulatory triggers under Section 502(a), including sources that are subject to a standard under Section 111. Of course, Section 502(a) also includes as Title V sources those facilities subject to preconstruction review, which is another reason why EPA should avoid including GHG sources in the preconstruction review program.

cover small GHG sources, and that EPA has inherent authority to phase in the applicability of the Title V program. We suggest that EPA phase in the Title V program beginning with Section 111 affected facilities, with little effort devoted to expanding the program beyond those affected facilities.

3. Conclusion

We believe that the most effective and cost-efficient method of curbing GHG emissions in the United States is through comprehensive climate change legislation. Barring such legislation, we have identified a regulatory approach that would bring up to eighty percent of GHG emission sources under control, but without the unintended consequences of dramatically expanded air quality planning procedures, preconstruction permitting requirements, or operating permit requirements. If legislation is unavailable, we urge EPA to: (1) decline to list GHGs as criteria pollutants; (2) regulate the top ten categorical sources of GHG emissions under a Section 111 cap-and-trade program with offsets; (3) interpret the phrase "regulated NSR pollutant" under the preconstruction permit program to include only those GHGs emitted at a Section 111 categorical source; and (4) interpret the definition of "major source" under the federal operating permit program to include only those GHGs emitted at a Section 111 categorical source.

If you have any questions regarding these comments, please feel free to contact Mr. Robert Garfield, Chairman of the Food Industry Environmental Council.

Respectfully submitted,

Robert Garfield

Chairman

Mr. WHITFIELD. Thank you so much.

Mr. Shaffer, you are recognized for 5 minutes.

STATEMENT OF CARL SHAFFER

Mr. Shaffer. Mr. Chairman, ranking member, and members of the committee, my name is Carl Shaffer. I have the privilege of serving on the Board of Directors of the American Farm Bureau Federation and as president of the Pennsylvania Farm Bureau. I am pleased to offer this testimony on their behalf.

As you know, EPA is phasing in the application of its greenhouse gas regulations through the promulgation of a Tailoring Rule under which the permitting requirements will apply to the largest emitters first, followed by small emitters at some unspecified future date. But even with this phased-in approach, farmers and ranchers are already being adversely affected by greenhouse gas regulations through increase fuel and energy cost passed down by utilities and refineries.

EPA itself estimated that there are more than 37,000 farms and ranches that emit between 100 and 25,000 tons of greenhouse gases per year and would likely be subject to Title V or operating permit requirements. This is concerning since, in the final Tailoring Rule, EPA estimated the average cost to obtain a permit would be more than \$23,000. Using EPA's own numbers, just the expense of obtaining permits will cost agriculture more than \$866 million. These costs are a significant burden to livestock producers.

While the Tailoring Rule has thus far deferred those permitting requirements for agricultural facilities, we still have two major concerns with the Tailoring Rule. First, it can only defer the permitting requirements for smaller emitters, not exempt them completely. The Clean Air Act clearly and specifically defines major sources as those emitting more than 100 tons or 250 tons of regulated pollutants per year. To put this in perspective, we are talking about farms with 25 dairy cows, 50 beef cattle, or 200 hogs. These numbers represent about 90 percent of America's livestock production which would be subject to Title V permitting requirements. Even by the standards of my father's generation, these numbers do not describe large farms. Only Congress can change these thresholds.

A provision in the fiscal year 2012 Interior Appropriations Bill prevented EPA from currently regulating greenhouse gas emissions from livestock, but there is no assurance that a similar provision will be in place for fiscal year 2013. There is little or no flexibility in the Clean Air Act to deviate from these requirements. Although the EPA administrator has expressed an intention not to regulate livestock emissions, there is nothing in the statute granting the administrator the authority to exempt agriculture from regulation.

Secondly, the Tailoring Rule is one of several greenhouse gas rules that are being challenged in the Court of Appeals for the District of Columbia. Oral arguments were heard on all of the rules in late February and a decision on the legality of these rules is expected in the very near future. A court ruling overturning the Tailoring Rule would immediately make the fear direct cost described previously become a sudden reality for farmers and ranchers across

the Nation. This regulatory train has already headed down the tracks and is picking up speed.

I want to thank you for conveying this hearing and the invitation to testify, and I welcome taking your questions.

[The prepared statement of Mr. Shaffer follows:]



Statement of the American Farm Bureau Federation

TO THE ENERGY AND POWER SUBCOMMITTEE OF THE HOUSE ENERGY AND COMMERCE COMMITTEE

REGARDING IMPACTS OF GREENHOUSE GAS REGULATION

June 19, 2012

Presented By: Carl Shaffer President, Pennsylvania Farm Bureau

SUMMARY OF TESTIMONY OF CARL SHAFFER AMERICAN FARM BUREAU FEDERATION

Farmers and ranchers are adversely affected economically by EPA regulation of greenhouse gases in two major ways:

- 1. Costs incurred by utilities, refiners and manufacturers to comply with greenhouse gas regulations will be passed along to their customers, including farmers and ranchers, resulting in higher costs of production. Farmers and ranchers generally cannot pass those costs on to their consumers.
- 2. Many farmers and ranchers will be required to obtain Title V operating permits under thresholds required by the Clean Air Act. The Department of Agriculture estimates that approximately 90 percent of the livestock industry is above the Clean Air Act thresholds required to be permitted. Many other farms and ranches would be subject to New Source Review and Prevention of Significant Deterioration construction permits when the regulations are fully implemented.

The Clean Air Act provides little flexibility to deviate from the statutory permitting requirements. EPA efforts to "tailor" or phase in these regulatory requirements do not alleviate these costs. Large emitters will still pass their costs down to consumers. The rule does not exempt agriculture from the permitting requirements—it only delays permitting for farmers. Court challenges to the tailoring rule could make permitting requirements immediately applicable to farmers and ranchers, if the rule is overturned

Mr. Chairman, Ranking Member and members of the Committee. My name is Carl Shaffer. I am President of the Pennsylvania Farm Bureau and a member of the Board of Directors of the American Farm Bureau Federation. Farm Bureau represents farms of all sizes, spanning virtually all commodities grown and sold in the United States. I own and operate a farm in Columbia County, Pennsylvania, where I raise soybeans, corn and wheat. I am pleased to offer this testimony on the potential impacts to agriculture resulting from the regulation of greenhouse gases (GHGs).

Thank you for the opportunity to testify today on the potential impacts to agriculture resulting from the regulation of greenhouse gases.

Agriculture and forestry are a unique economic sector with regard to greenhouse gases, in that the agriculture and forestry sector has the potential to sequester more carbon than it emits—in other words, agriculture and forestry are, or can be, net sinks for greenhouse gases. The most recent inventory of greenhouse gases shows that agriculture and forestry emitted approximately 6.3 percent of U.S. greenhouse gas emissions in 2010. The same sectors also sequestered an equivalent of about 12 percent of greenhouse gas emissions, thereby becoming a net sink. Under EPA's endangerment finding, which grants the agency the authority to regulate greenhouse gases (a decision being challenged in the courts), the Clean Air Act does not recognize the valuable contributions that agriculture and forestry provide in greenhouse gas sequestration. Moreover, regulation of forestry and agricultural emissions could also negatively affect the sequestration opportunities that these sectors provide.

In its December 15, 2009 endangerment finding, the Environmental Protection Agency (EPA) stated that six greenhouse gases "endanger" public health and safety, thereby triggering

regulation under the Clean Air Act. On January 2, 2011, EPA regulations went into effect regulating greenhouse gas emissions from light duty motor vehicles. Once EPA classified greenhouse gases as a "regulated pollutant," its authority extended to regulation of stationary sources as well. These sources include not only power plants and refineries, but also farms and ranches.

The Clean Air Act mandates certain regulatory programs for stationary sources that emit regulated pollutants at specified levels. The New Source Review (NSR) and Prevention of Significant Deterioration (PSD) programs require that any "major" stationary source obtain a permit before building or modifying any facility that would increase emissions of regulated pollutants. Title V of the Clean Air Act requires that "major sources" of pollution obtain permits as a condition of continued operation.

The Clean Air Act establishes in statute certain threshold levels for stationary sources that trigger application of certain regulatory programs. For purposes of the NSR and PSD programs, stationary sources are considered "major sources" subject to Clean Air Act requirements if they emit, or have the potential to emit, more than 250 tons of a regulated pollutant per year. The Clean Air Act defines any stationary source emitting, or having the potential to emit, more than 100 tons of a regulated pollutant as a "major source" required to obtain an operating permit pursuant to Title V.

For many regulated pollutants the statutory thresholds are high enough to encompass only the largest emitters. For greenhouse gases, however, the situation is different. There are literally millions of sources that qualify as "major sources" of greenhouse gas emissions under Title V—a fact admitted by EPA.

The regulation of greenhouse gases under the Clean Air Act will ultimately result in a number of unintended consequences that EPA may not be able to mitigate through regulation.

Farmers and ranchers receive a double economic jolt from the regulation of GHGs from stationary sources. First, any costs incurred by utilities, refiners, manufacturers and other large emitters to comply with GHG regulatory requirements will be passed on to the consumers of those products, including farmers and ranchers. As a result, our nation's farmers and ranchers will be faced with higher input fuel and energy costs, to grow food, fiber and fuel for America and beyond. To a large degree, farmers and ranchers cannot pass along these increased costs of production to their buyers.

EPA is phasing in the application of its greenhouse gas regulations through promulgation of a "Tailoring Rule," under which the permitting requirements of NSR/PSD and Title V will apply to the largest emitters first, with application to smaller emitters coming at some unspecified later time. But even with this phased in approach, farmers, ranchers and other small entities are already adversely affected by greenhouse gas regulations through paying higher fuel and energy costs.

Secondly, farmers and ranchers will face the distinct possibility of direct regulatory costs resulting from the regulation of GHGs by EPA. For the first time, many farm and ranch operations will in all likelihood be subject to direct NSR/PSD construction permit and Title V permit requirements under the Clean Air Act.

Fully implemented, the EPA greenhouse gas regulatory programs will require thousands of farms and ranches to obtain costly and burdensome permits. In its proposed tailoring rule, EPA itself estimated that there are more than 37,000 farms and ranches that emit between 100 tons and 25,000 tons of greenhouse gases per year and would thus likely be subject to permitting

requirements under Title V. (We suspect the numbers may be higher than these estimates.) In the final tailoring rule, EPA estimated the average cost to obtain a Title V permit was more than \$23,000. Using EPA's own numbers, just the expense of obtaining Title V operating permits will cost the agricultural sector more than \$866 million. That does not include the expense of yearly fees under Title V nor any costs that might be incurred for NSR/PSD permits.

Without action, animal agriculture would be one of the hardest hit sectors from greenhouse gas regulation.

As part of its Advance Notice of Proposed Rulemaking (ANPR) on possible regulation of greenhouse gases, EPA included comments from several government agencies from the inter-agency review. In a letter sent to the Office of Management and Budget, dated July 9, 2008, the U.S. Department of Agriculture (USDA) stated the following:

If GHG emissions from agricultural sources are regulated under the Clean Air Act, numerous farming operations that currently are not subject to the costly and time-consuming Title V permitting process would, for the first time, become covered entities. Even very small agricultural operations would meet a 100-tons-per-year emissions threshold. For example, dairy facilities with over 25 cows, beef cattle operations of over 50 cattle, swine operations with over 200 hogs, and farms with over 500 acres of corn may need to get a Title V permit. Federal Register, page 44377

USDA derived these figures using its Simplified Emissions Inventory Tool developed as part of the Voluntary Reporting of Greenhouse Gases Program at the Department of Energy.

By any standard of measurement, these are "very small agricultural operations" that would become subject to burdensome permitting requirements under Title V. USDA National Agricultural Statistics Service (NASS) statistics for 2010-2011 show that 99 percent of dairy production would meet the minimum threshold level. Similarly 97.3 percent of hog production

is from operations with more than 500 hogs. NASS figures also show that 72 percent of beef cows are in herds larger than 50, and would thus meet the Clean Air Act Title V threshold for regulation.

Title V is generally administered by the states, and permit fees vary from state to state. EPA establishes a "presumptive minimum rate" for states to use as a guide if they so choose. The "presumptive minimum rate" through September, 2012 is \$45.55 per ton over the 100 ton threshold up to a maximum of 4,000 tons as set by the Clean Air Act. Thus, if a state imposes Title V fees on livestock producers and if it applies the "presumptive minimum rate," the resulting annual cost to livestock producers would be \$182.20 per dairy cow, \$91.10 per beef cow and \$22.75 per hog, up to a maximum total possible cost of \$182,200.

These costs would pose a significant burden to livestock producers. A provision in the FY12 Interior and Related Agencies Appropriations Bill excluded greenhouse gas emissions resulting from the natural biological processes of livestock from regulation. There is no assurance that a similar provision will be in place for FY 2013 or beyond.

Agricultural facilities will also be adversely affected by the application of greenhouse gas regulations to the NSR and PSD programs. A study done for the United States Chamber of Commerce entitled "A Regulatory Burden: The Compliance Dimension of Regulating CO2 as a Pollutant," Mills, Sept. 2008, estimates there are approximately 17,000 agricultural facilities that emit more than 250 tons of CO2 per year and thus qualify as "major sources" for NSR/PSD purposes. The report states that about 3,400 oil seed and grain farms would be regulated, as well as about 1,400 greenhouses and nurseries, and 1,100 poultry and egg facilities. Other farm types

that would be subject to NSR/PSD include fruit and tree nut operations, vegetable and melon facilities, and livestock facilities that emit CO2.

NSR/PSD will apply to these facilities only when they apply to build or renovate their facilities. The EPA estimates the average cost for an agricultural source to apply for and obtain a PSD permit to be \$59,000.

As mentioned above, stationary sources of greenhouse gas emissions have been subject to EPA regulation under the Clean Air Act since January 2, 2011. Agricultural facilities have not yet been required to obtain Clean Air Act permits because EPA issued its "tailoring rule" under which the largest GHG emitters would be permitted first, and permit requirements for others would be phased in over a period of time. For example, under the tailoring rule, only those entities emitting more than 100,000 tons of greenhouse gases per year are currently required to obtain Clean Air Act permits for greenhouse gas emissions.

While the tailoring rule has thus far deferred permitting requirements for thousands of agricultural facilities, we have two major concerns with the tailoring rule.

First, the tailoring rule at its fullest can only defer the permitting requirements for smaller emitters, not exempt small emitters completely. The Clean Air Act clearly and specifically defines "major sources" as those emitting more than 100 tons or 250 tons of regulated pollutants per year, and these thresholds cannot be changed through regulation. Only Congress can change these thresholds. So even though the direct costs that we have described above may not yet have occurred, they will eventually be incurred by farmers and ranchers.

There is little or no flexibility in the Clean Air Act to deviate from these requirements.

Although the EPA administrator has expressed an intention not to regulate livestock emissions,

for example, there is nothing in the statute granting the administrator the authority to exempt them from regulation. Intention and compliance with the law are often two different considerations.

Secondly, the tailoring rule is one of several greenhouse gas rules that are being challenged in court. Oral argument was heard on all of the rules in late February in the Court of Appeals for the District of Columbia. A decision on the legality of these rules is expected in the near future. A ruling overturning the tailoring rule would immediately subject any stationary source emitting more than 100 tons of greenhouse gases per year to the requirements of Title V, and any stationary source emitting more than 250 tons per year immediately subject to the NSR/PSD permitting requirements. All of the direct costs described above would suddenly come into play should the tailoring rule be overturned.

Even with the tailoring rule, farmers and ranchers are paying higher fuel and energy costs resulting from the regulation of utilities, refineries, manufacturers, and other upstream input providers. The costs that those upstream entities incur to comply with the greenhouse gas regulations are passed down to farmers and ranchers.

Farm Bureau appreciates the efforts of this Committee and the full House for passing H.R. 910, the Energy Tax Prevention Act, to prevent this burdensome impact to agriculture. We encourage the Senate to take similar action.

Thank you for the opportunity to testify. I look forward to your questions.

Mr. WHITFIELD. Thank you very much.

Mr. Smith, you are recognized for 5 minutes.

STATEMENT OF CHARLES SMITH

Mr. SMITH. Chairman Whitfield, Ranking Member Rush, and members of the subcommittee, thank you for giving me the opportunity today to testify at the hearing on the American Energy Initiative. My name is Charlie Smith, and I am president and CEO of CountryMark, and I believe it is important for Congress to understand how the process affects companies such as CountryMark.

CountryMark is an oil refinery. We are pretty different from any other refinery in the world. We are owned by over 100,000 farmers. We are leaders in distribution of biodiesel and ethanol. The crude we refine is a 100 percent American and comes from oilfields in Indiana, Illinois, and Kentucky. We refine 27,000 barrels per day of crude, which makes us one of the smallest refineries in the country. The other refinery in the State of Indiana is 15 times larger than us. We are a very small fish in a very big pond.

My written testimony provides more details into CountryMark's position on greenhouse gas regulations. My oral testimony today I

would like to focus on a few areas.

The cost of regulatory burdens on our industry are dramatically underestimated by the EPA many times. For example, the EPA required CountryMark to install continuous emissions monitoring systems at our refinery. The EPA's cost estimate was that this would cost \$9,500 per refinery and would have no impact on the refinery. In fact, the EPA did not even convene the SBREFA process to look at the cost and the impact on small business refiners. In the end, we spent \$450,000 to install that equipment; we will spend \$4 million over the next 10 years to operate it. The EPA's cost estimate for that same equipment was \$10,000.

The EPA pursues its regulatory goals with multiple rules pro-

The EPA pursues its regulatory goals with multiple rules producing harmful uncertainty for our industry. In May 2010, the EPA had issued its final rule addressing greenhouse gas emissions from stationary sources. Under that Tailoring Rule existing facilities with carbon dioxide emissions exceeding 100,000 metric tons per year are required to obtain an updated operating permit. In addition, facilities to implement modifications increasing CO2 emissions

by 75,000 metric tons would require a PSD permit.

However, of great concern to us is that EPA has then indicated they intend to further restrict greenhouse gas emissions from the refining sector alone by applying another concept called New Source Performance Standards, NSPS. By uniquely regulating greenhouse gas emissions from the U.S. refining sector, the EPA directly threatens refineries, especially the small ones like

CountryMark.

Unlike the Tailoring Rule, meeting NSPS requirements involves Best Available Control Technology, which is frequently uneconomic in small refineries. If the EPA uses NSPS rulemaking to drive greenhouse gas limits to the statutory limits of 250 metric tons or less, this will be orders of magnitude more stringent than the current Tailoring Rule. Because small refineries are particularly sensitive to capital cost, the additional NSPS requirements to meet the stricter limits would make modifications uneconomical. That would

limit our ability to improve our process, grow our refinery, and it starts to threaten the jobs.

EPA's own rules frequently conflict with each other. For example, EPA required CountryMark to spend \$85 million to reduce sulfur in gasoline and diesel fuel. We spent \$6.2 million per year operating this equipment. Two years after the startup of our low sulfur gasoline project, EPA indicated we come up with Tier 3 gasoline regulations to further reduce sulfur in gasoline. CountryMark has estimated complying with this additional requirement will cost another \$15 million.

Reduction in sulfur has been done on the manner that is not cost-effective; it has been done piecemeal instead. But ironically, these low sulfur mandates require us to utilize equipment that increases our greenhouse gas footprint by 15 percent.

The cumulative impact of these regulations seriously threatens our company. Each regulation EPA promulgates is a cost, yet the EPA never examines the collective impact of the regulations. By employing rule-by-rule focus to their economic analysis, the larger cumulative impact is hidden. Its cumulative impacts are true cost and other costs we experience every day. They drive up the cost of our products and they threaten our long-term viability.

We operate in a county with 26,000 residents and we employ over 300 workers. Each year, we put \$30 million of wages and benefits a year into that community. We spent \$800 million a year buying crude oil from 40,000 individual royalty owners in Indiana, Illinois and Kentucky. Total economic impact in the tri-State area is \$2.5 billion per year. That is money that stays in America's heartland. It is manufacturing costs. They are the jobs that we covet as a Nation both during recessionary times and not. If we continue to increase these costs, companies like CountryMark will be unable to compete with the large multinational oil companies both here and abroad.

Thank you for the opportunity to be here today. We fully support legislation that would impose rational and realistic cost analyses, cumulative impact analyses, and congressional approval of the EPA's ability to regulate greenhouse gas emissions from the refining industry and especially small business refiners.

Thank you.

[The prepared statement of Mr. Smith follows:]



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WRITTEN STATEMENT OF COUNTRYMARK COOPERATIVE HOLDING CORPORATION AS SUBMITTED TO THE SUBCOMMITTEE ON ENERGY AND POWER

Committee of Energy and Commerce United States House of Representatives

On

"The American Energy Initiative"

TUESDAY, June 19, 2012 10:00 AM Rayburn 2123

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I. Introduction

Chairman Whitfield, Ranking Member Rush and Members of the Subcommittee, thank you for giving me the opportunity to testify in today's hearing on the "The American Energy Initiative." I'm Charlie Smith, and I serve as President and CEO of Countrymark Cooperative (CountryMark). As the EPA continues to develop and promulgate regulations that control Greenhouse Gas (GHG) emissions, I believe it is important for Congress to understand how the GHG regulatory process will impact and affect companies such as CountryMark.

CountryMark is Indiana's only American-owned oil refining and marketing company, and is recognized nationwide as a leader in the distribution of biodiesel and ethanol. The CountryMark refinery uses 100% American crude oil sourced from the Illinois Basin located in Illinois, southwest Indiana, and western Kentucky. Our refinery processes 27,000 barrels of crude per day, which represents only 0.15% of the entire domestic refining industry. Our capacity is 1/10 the size of the average refinery in our region. Even though CountryMark is small from an industry perspective, we have a large impact on the State of Indiana, southeast Illinois and western Kentucky. CountryMark supplies over 75% of agricultural market fuels, and 50% of school district fuels in Indiana.

CountryMark is owned and controlled by its member cooperatives which are owned and controlled by individual farmers within our trade territory. Over 100,000 farmers in Indiana, Michigan and Ohio participate in these local cooperatives, through which they enjoy ownership in CountryMark.

CountryMark's Board of Directors is controlled by farmers. Each year, profits are distributed back to farmers via the cooperative system. These cash distributions remain in rural communities, where the dollars support local economies.

CountryMark is a Small Business Refiner (SBR), and along with most other SBRs, we are located in rural America. We, therefore, have our strongest economic impact in the rural communities we serve. We purchase over \$800 million of crude oil per year from the Illinois Basin. These purchases provide income to the 40,000 royalty owners. Our products are sold and distributed through our branded dealer network, providing solid employment throughout the rural communities of Indiana.

CountryMark's operations employ nearly 450 workers, mostly in the rural economy of southwest Indiana and southeast Illinois. In Posey County, Indiana alone, a county with only 26,000 residents, over \$30 million in wages and benefits are provided each year. These wages are over twice the local average,

and are paid mostly to hourly workers who have little or no local opportunity for other similar employment.

In addition to the positive financial impact of CountryMark's crude purchases and payroll, the company contributes over \$200 million into the local economy for the purchase of other goods and services. With everything combined, CountryMark's total economic impact exceeds \$2.5 billion per year. This money stays here in America's heartland, and provides much needed jobs in mostly rural communities.

All SBRs compete in a highly competitive global commodity market where both U.S. and foreign competition influence refining margins and economics. Unlike large, fully integrated oil companies, we only operate between two commodity markets: 1) the crude oil market and 2) the gasoline and diesel fuel markets. We purchase crude oil that is priced in the global market, refine it, and sell our products into the highly competitive refined product market. Between these two markets, CountryMark survives by controlling our costs compared to other fuel suppliers.

Regulations and mandates increase operating costs, which in turn, negatively impact SBR's ability to manage costs of operations. This regulatory cost impact affects all refiners, but especially SBRs such as CountryMark, due to our small scale. When a refiner cannot pass on or absorb these costs they go out of business. The result is reduced domestic refining capacity, loss of high-paying manufacturing jobs and higher fuel costs for the consumer.

The following sections explain how current, proposed and potential future GHG regulations individually, and in combination, drive up our costs. These higher costs are either passed on to the consumer in the form of increased gasoline or diesel prices, or the refinery goes out of business when the costs exceed the capitol reserves or credit of the refinery; in the case of an SBR, reserve capital and credit are insufficient and do not provide a long term solution.

In addition, several regulations have conflicting consequences, so our industry ends up in between the proverbial rock and a hard place. Regulatory development must be coordinated and use a holistic approach to ensure cumulative costs are taken into account and unintended consequences are mitigated.

II. GHG Reporting Rule

In October 2009, the U.S. Environmental Protection Agency (EPA) issued the final Mandatory Reporting of Greenhouse Gas rule, which required facilities that emit greater than 25,000 metric tons of GHG's per year to submit annual reports to the EPA. During the months leading up to the final rule, both CountryMark and the ad-hoc group of SBRs commented on the proposed rule. I would like to highlight two of those comment areas; specifically, 1) compliance cost and 2) de minimis emissions.

- 1. Compliance Cost: From our perspective, the EPA is ignoring the reality of the actual cost of compliance. In the proposed rule, EPA estimated that the cost of compliance with the GHG reporting rule was small, and therefore did not have a significant impact on businesses, including SBRs. For example, the EPA's cost estimate for installation of Continuous Emission Monitoring Systems (CEMS) was \$9,500 per refinery. With this presumed minimum impact, the EPA did not establish a Small Business Regulatory Enforcement and Fairness Act (SBREFA) process to investigate the negative impacts on SBRs and determine flexibility options. CountryMark's actual cost to install the required CEMS was \$450,000 47 times more expensive than the EPA's estimate. First year setup and compliance cost exceeded \$750,000. Over the next ten years, the cost to comply with this rule alone will exceed \$4 million.
- 2. De Minimis Emissions: According to 2010 data published by the EPA, the entire refining industry represents only 5.7% of the 3.2 billion metric tons of reported stationary sources of GHGs. CountryMark's 199,913 metric tons is 0.00625% of the total reported GHG emissions. Not only does the refining industry contribute a small percent to the economy's overall GHG emissions, but CountryMark's contribution is infinitesimal. Any rational regulatory approach would recognize CountryMark's GHG emissions as de minimis. However, CountryMark is subject to this regulatory burden, and in fact, it increased our operating cost disproportionately to the overall impact that our refinery has to global GHG emissions, while raising the cost of fuel to consumers. This rule, and its consequences, are not isolated in their affect, and in fact, interact with other rules to create even larger negative consequences.

III. GHG Tailoring Rule

In May 2010, the EPA issued its final rule addressing GHG emissions from stationary sources under the Clean Air Act (CAA) permitting programs. This final rule sets thresholds for GHG emissions that define when permits under the New Source Review Prevention of Significant Deterioration (PSD) and Title V Operating Permit programs are required for new and existing industrial facilities. Under the tailoring rule, existing facilities with carbon dioxide emissions exceeding 100,000 metric tons per year are required to obtain an updated operating permit. In addition, facilities that would implement modifications increasing carbon dioxide emissions by 75,000 metric tons per year would require a PSD permit. Both thresholds were set to limit the number of GHG permits that would be required throughout the national economy. Because CountryMark's GHG emissions exceed 100,000 metric tons per year, CountryMark will need to update its Title V permit for our current operations. However, due to our size, any modifications we would make would most likely have emissions less than 75,000 metric tons, and therefore, not require a GHG PSD permit. To illustrate this point, a small facility like CountryMark's 27,000 barrel per day refinery has process heaters and boilers that average approximately 30 MMBTU/Hr. This results in approximately 15,000 metric tons per year of GHG emissions. This is well below the 75,000 metric ton threshold set by the GHG tailoring rule. Therefore, in the current environment, CountryMark would be able to replace obsolete equipment with improved modern equipment without the unnecessary and misplaced requirements of a PSD permit.

CountryMark is preparing to operate under the current tailoring rule. However, decreasing the tailoring rule limits would put significant regulatory pressure on CountryMark, especially with regards to replacement of obsolete equipment or making improvements. Without the ability to upgrade, CountryMark would eventually not be able to operate and potentially go out of business. The EPA has not indicated significant upcoming changes to the tailoring rule limits at this time. However, of great concern is that EPA has indicated they intend to further restrict GHG emissions for the refining sector applying another concept called New Source Performance Standards (NSPS).

IV. New Source Performance Standards

CountryMark participated as a Small Entity Representative (SER) on Small Business Advocacy Review (SBAR) panels for both the Tier 3 Fuels and the "Petroleum Refinery Sector Risk and Technology Review and New Source Performance Standard" proposed rule makings. Meetings were held for both panels on June 28, 2011 and August 18, 2011. The SERs are on record stating the information provided as part of the "Petroleum Refinery Sector Risk and Technology Review and New Source Performance Standard" was inadequate for the purpose of providing flexibility options to the EPA from the SERs.

At the SBAR panel meetings, the EPA articulated how they intended to further control GHG emissions only in refineries, below the tailoring rule limits that apply to the general economy. CountryMark was able to evaluate the impact of the EPA's intentions to lower the GHG limits below those stipulated in the tailoring rule. By uniquely regulating GHG emissions from only the U.S. refining sector, the EPA directly threatens small refineries such as CountryMark, since we lack the ability to pay for costly and arbitrary regulations.

Unlike the tailoring rule, meeting NSPS requirements may involve Best Available Control Technology (BACT). BACT is usually applicable to larger sources, because economic considerations are part of the determination. For smaller facilities, BACT implementation is typically uneconomical, because the size of the equipment and de minimis emissions cannot justify the cost. For example, at large refineries with fired process heaters that burn 100's of millions of British Thermal Units (BTU) an hour, BACT equipment includes expensive air pre-heat equipment. In these situations, this makes economic sense because BACT equipment optimizes energy input costs. At a small refinery like CountryMark's, the smaller sized process heaters are a natural draft design and do not have air pre-heat. For small process heaters, BACT could add more that 50% to the cost of the new equipment. The additional cost of installing BACT equipment at a small refinery would not provide a commensurate energy savings while threatening our viability.

If the EPA uses the NSPS rulemaking to drive GHG limits to statutory limits of 100 and 250 metric tons, it would be orders of magnitude more stringent than the tailoring rule. Since most SBRs are sensitive to capital costs, the additional increase required to meet the stricter limits would make most modifications uneconomical, limiting or precluding growth at our refinery, and thus threatening our jobs.

The EPA also told the SERs they were considering energy management and intensity benchmarking as additional ways to further reduce GHG emissions through the proposed NSPS rulemaking. There are significant problems with these prescriptive approaches to reducing GHG emissions.

- 1. Energy Management: Energy costs are a very high expense item in a refinery. Economic realities for refineries have already forced operators to undertake energy management programs in order to optimize and reduce energy costs, which have already lowered GHG emissions. In 2007, CountryMark implemented an energy program where the primary energy savings were achieved from tuning and optimizing excess air in heaters and boilers. Significant investment was made for program implementation. The EPA discussed prescriptive requirements for meeting stringent energy management goals. The EPA's type of approach would increase compliance costs due to reporting requirements alone. Prescriptive EPA rules do not allow for innovation and typically cost more to implement than EPA estimates. Any energy management program should be performance- based and flexible enough to allow existing programs to meet compliance objectives.
- 2. Intensity Benchmarking: Intensity benchmarking would compare every refinery to the same standard developed by the EPA. The problem with the EPA setting standards is that no two refineries have the same capacity, complexity or feed stock. Based on past experience with benchmarking programs, the impacts on small refineries are inadequately understood by the EPA's approach. Small refineries do not have the economies of scale. Even on a process by process basis, small facilities have limited opportunities for heat integration. Also, since a large facility has more power demand, its scale provides opportunities for co-generation facilities which also improve efficiency. This is not true in a small facility. Benchmarking has to account for complexity of processing units and power generation. Physical equipment size should be taken into account. Treating small refineries and larger complexes the same is like comparing apples to oranges. A prescriptive approach to benchmarking has the potential to inadvertently drive SBRs out of business due to disproportional economic impacts of ignoring facility size in the equation.

In the end, it appears that the EPA is headed toward further restricting GHG emissions from refineries even though the tailoring rule as it now stands would not require dramatic changes for small refiners. A one-size-fits-all approach is clearly inappropriate and, if done, would further damage CountryMark's

ability to stay in business. The EPA's approach outlined in the SBAR panel meetings presents uncertainty as to how the EPA will further reduce the threshold for GHG permits requiring BACT. Implementing BACT for small sources would have diminishing returns since the cost would be high but the incremental reduction would be very small. The EPA even admitted in the SBAR panel meetings that reductions from refinery process heaters and boilers would only be in the 1-3% range. With the entire refining industry only contributing 5.7% of GHG emissions, stringent requirements for process heaters would only reduce national GHG emissions by 0.17%. This begs the question as to why require additional expense, which will threaten our existence, for minimal returns?

V. Conflicting Requirements

The EPA's Clean Air Highway Diesel rule and Non-road Diesel rule requires that only 15 parts per million (ppm) of sulfur diesel fuel be sold on and off-road. To achieve compliance with this requirement and continue to stay in business, CountryMark was required to construct and start-up a Distillate Hydrotreater (DHT) unit in 2006. This project also included construction of sulfur recovery facilities, resulting in a total cost of approximately \$50 million. The annual operating cost for the DHT is \$4.4 million.

The EPA's Tier 2 Gasoline rules required that gasoline sulfur be reduced to 30 ppm. To comply, CountryMark has constructed a Low Sulfur Gasoline (LSG) unit in order to continue to sell product and stay in business. The LSG unit cost was \$33 million and has an annual operating cost of \$1.8 million per year.

The EPA has indicated it will soon propose Tier 3 gasoline regulations that would further reduce sulfur in gasoline from 30 ppm to 10 ppm. CountryMark has estimated that complying with this additional requirement has potential capital costs of \$15 million and increased operating costs of over \$200,000 per year.

Removing sulfur from diesel fuel and gasoline takes hydrogen and energy, which in turn, significantly increases CountryMark's GHG emissions. Prior to installing desulfurization capabilities, CountryMark purchased minimal amounts of natural gas for combustion. Instead, excess hydrogen produced by reforming was burned in process heaters resulting in minor GHG emissions. This hydrogen is now required to remove sulfur from diesel fuel and gasoline. CountryMark now purchases natural gas for

combustion in process heaters. In addition, desulfurization takes energy which requires additional process heaters and increased steam production. Therefore, the energy intensity of the refinery has increased, due to additional fired sources. These two effects combined have increased refinery GHG emissions by 10-15%.

CountryMark spent or will spend nearly \$100 million over a ten year period to comply with EPA's low sulfur fuel requirements just to stay in business. These changes have increased GHG emissions. Now with GHG reductions looming on the horizon, CountryMark and other SBRs will be penalized through GHG regulation for complying with other EPA requirements. Even with the increased GHG emission due to removing sulfur from fuels, CountryMark still only contributes an infinitesimal fraction (0.00625%) to the nation's GHG emissions.

VI. Cap and Trade

In addition to those issues outlined in previous sections, the specter of implementing potential limits on GHG emissions through a cap and trade regime is still within EPA's power. A GHG regulatory regime of the variety discussed in Congress in 2009 would be devastating to CountryMark. The first year compliance costs could exceed annual income, as was the case with some prior legislative proposals. CountryMark would not be able to absorb the high compliance costs and remain economically viable. Therefore, CountryMark and the rest of the industry would need to pass those additional costs on to consumers in the market or go out of business.

VII. Conclusion

CountryMark operates in a highly competitive commodity market, where oil prices and refining margins are influenced by global events beyond our control. Regulations and mandates increase capital requirements, operating costs and product costs, which in turn make refiners, especially those SBRs like CountryMark, less competitive. When refiners cannot pass on these costs to the consumer, or absorb these costs, they go out of business. The result is reduced domestic refining capacity and consequentially higher gasoline and diesel costs for the consumer. If domestic refining capacity is reduced, EPA regulations will actually increase U.S. demand for imported fuels and consumer prices will increase.

Regulation of GHG poses a significant threat to CountryMark, other SBRs and the domestic refining industry. The refining industry as a whole only contributes 5.7% of the nation's GHG emissions reported from stationary sources. The EPA admits that regulating the refining industry will only lower GHG emissions by 1-3% for process heaters and boilers. For example, assuming refinery GHG emissions were reduced by 5% and according to published reports the United States contributes approximately 18% of global GHG emissions, regulating GHG for refineries has the potential to reduce $(5.7\% \times 5\% \times 18\% =)$ 0.00051% of global GHG emissions. The potential cost of compliance is high for very small impacts on global GHG. Capital and expense that is spent on regulatory compliance cannot be spent on growth opportunities that lead to higher employment. If these costs cannot be absorbed or passed on to the consumer, refiners will shutdown. Either way, costs will increase in the long term as refining capacity is rationalized.

CountryMark fully supports any legislation that would impose rational and realistic cost analysis, cumulative impact analysis and congressional approval of the EPA's ability to regulate GHG emissions from the refinery industry and especially SBRs like CountryMark.

Table of Acronyms

BACT Best Available Control Technology

BTU British Thermal Unit

CAA Clean Air Act

CEMS Continuous Emissions Monitoring System

DHT Distillate Hydrotreater

EPA U.S. Environmental Protection Agency

GHG Greenhouse Gases
LSG Low Sulfur Gasoline

MMBTU/hr Million British Thermal Unit per hour

NSPS New Source Performance Standard

NSR/PSD New Source Review Prevention of Significant Deterioration

PPM Parts per Million

PSD Prevention of Significant Deterioration

SBAR Small Business Advocacy Review

SBR Small Business Refiner

SBREFA Small Business Regulatory Enforcement and Fairness Act

SER Small Entity Representative

Mr. WHITFIELD. Thank you.

Mr. Weiss, you are recognized for 5 minutes.

STATEMENT OF DANIEL J. WEISS

Mr. Weiss. Thank you, Mr. Chairman, Ranking Member Rush, and members of the subcommittee. Thank you very much for the

opportunity to testify today.

I would like to address several elements of EPA's proposed carbon pollution standard. In 2007, the Supreme Court ruled in Massachusetts v. EPA that "greenhouse gases fit well within the Clean Air Act's definition of air pollutant." Based on this decision, EPA must first determine whether carbon pollution endangers the pub-

lic health and welfare.

In 2008, then-EPA Administrator Stephen Johnson wrote to then-President George W. Bush that "the Supreme Court's Massachusetts v. EPA decision combined with the latest science of clichange requires the Agency to propose a positive endangerment finding. It does not permit a credible finding that we need to wait for more research." Johnson also recommended to the President that EPA begin to regulate carbon pollution from major sources.

President Bush ignored Administrator Johnson in the law. After the Obama administration made the endangerment finding, it established limits on carbon pollution for motor vehicles and addressed permits for large, new, and expanded industrial facilities.

As Congress intended, EPA wisely focused on a relatively small number of the largest new industrial sources that emit more than 100,000 tons per year of carbon pollution and on expanded facilities that increased their emissions by 75,000 tons per year. This Tailoring Rule includes the sources of about 70 percent of industrial carbon pollution. And I would just like to note that the American Farm Bureau Federation, the American Petroleum Institute, and the National Petrochemical and Refiners Association are all plaintiffs in the lawsuit that are trying to overturn the Tailoring Rule so that the concerns raised by Mr. Shaffer and Mr. Smith will actually come true.

The Clean Air Act requires that a new facility seek a clean air permit. In 2011, there were fewer projects with enough pollution to qualify than both industry and EPA predicted. As of December of last year, EPA and the State permitting authorities have issued 18 permits with carbon pollution limits with about 50 other permit ap-

plications pending or an average of one per State.

On April 13th, the Environmental Protection Agency proposed the first-ever rules that limit carbon pollution from new power plants. The proposal will require these plants to emit 40 to 60 percent less carbon pollution than a typical new coal-fired power plant. Richard Morgenstern, a former Reagan and Clinton EPA official, predicts that the new carbon pollution will have "no net impact" on employment.

Americans support reductions of carbon pollution. In March 2012, a bipartisan poll by the American Lung Association found "after listening to a balanced debate with messages both for and against setting new carbon standards, 63 percent were in favor of action and 33 percent opposed." The Republican pollster who did the poll concluded that "there is broad support across partisan lines for new carbon regulations on power plants." In addition, nearly 2 million people have already submitted comments to EPA

in favor of the proposed rule.

Now, some claimed that there is a war on coal. This is untrue. For instance, the Obama administration has made significant investments in technologies to reduce carbon pollution from coal combustion. The American Recovery and Reinvestment Act included \$3.4 billion for carbon capture and storage technology research including funds to revive the FutureGen clean coal pilot project that President George W. Bush had scrapped. There was also funds for seven other clean coal projects.

Coal mining employment figures also debunk this mythical war. In May, the Charleston Gazette reported that "employment in the Appalachian mining industry is at 14-year high." The nonpartisan West Virginia Center for Budget and Policy reports that coal mining jobs there are rising. Energy Information Administration data shows increases in other States, too, including Illinois, Pennsylvania, and Virginia. Coal companies continue to make huge profits. In 2011, the two largest companies, Peabody Energy and Arch Coal, made a combined profit of over \$1 billion.

Reducing carbon pollution grows more urgent. For instance, on June 16, a few days ago, the San Francisco Chronicle reported that Californians face an increase in the West Nile virus due to global warming. Now, some in Congress still deny that climate change is real or caused by human activity even though the National Academy of Sciences found that "97 to 98 percent of the climate researchers support the tenets of human-made climate change."

The House of Representatives has been a roadblock to cleanup. In this Congress, they had cast 37 votes to block climate change action. We urge the House to reduce the climate change threat to Americans' health, economy, and jobs by heeding the words of General George S. Patton—"lead me, follow me, or get out of my way."

Thank you very much.

[The prepared statement of Mr. Weiss follows:]

Center for American Progress Action Fund

Daniel J. Weiss Senior Fellow and Director of Climate Strategy Center for American Progress Action Fund

Testimony on
The American Energy Initiative: A Focus on EPA's Greenhouse Gas
Regulations

Subcommittee on Energy and Power, House Energy and Commerce Committee 2123 Rayburn House Office Building June 19, 2012 Chairman Whitfield, Ranking Member Rush, and members of the subcommittee, thank you very much for the opportunity to testify today about the regulation of industrial carbon pollution under the Clean Air Act.

Climate change represents one of the gravest threats posed to humans and it is essential that the United States and other nations significantly reduce their industrial carbon and other pollutants responsible for it. The United States and other nations are already experiencing many of the climate change impacts scientists have warned us about, including warming temperatures, severe drought, massive rainfall and floods, and other extreme weather events.

In 2010 the National Academy of Sciences determined that global warming is real, and human induced:

There is a strong, credible body of evidence, based on multiple lines of research, documenting that **climate is changing and that these changes are in large part caused by human activities.** While much remains to be learned, the core phenomenon, scientific questions, and hypotheses have been examined thoroughly and have stood firm in the face of serious scientific debate and careful evaluation of alternative explanations.

The United States Global Change Research Program, primarily written under President George W. Bush, determined that "global warming is unequivocal and primarily human-induced." It further states that climate related impacts are visible now and will continue to grow.

Americans believe global warming is real. A just-released public opinion survey by the <u>Brookings Institute</u> found overwhelming agreement that "there is solid evidence of global warming." It found that 81 percent of Democrats, 42 percent of Republicans, and 72 percent of independents believe there is solid evidence of global warming.

Global warming pollution on the rise

A report from the National Oceanic and Atmospheric Administration, or NOAA, showed the continental United States set temperature records for the warmest spring, largest seasonal departure from average, warmest year to date, and warmest 10-month period.

NOAA also just released its <u>"State of the Climate Global Analysis"</u> for May 2012. It reported that this past month was the second warmest May globally since records began in 1880, behind only 2010. It was the hottest May *ever* for the northern hemisphere.

As global warming continues, droughts are projected in the Southwest that will likely reduce perennial vegetation and result in increased dust storms. Dust bowls, extreme weather, and food insecurity will all result. It is why 33 generals and admirals in 2010 called for a comprehensive climate and energy legislation since climate change is a threat to U.S. security.

The <u>U.N. Intergovernmental Panel on Climate Change</u> projects that we must keep atmospheric warming below 2 degrees centigrade, or 3.6 degrees Fahrenheit, to stave off the worst impacts of global warming. This requires limiting atmospheric carbon and other pollutants to no more than 450 parts per million.

Yet pollution from the United States, China, India, and other nations continue to accumulate in the atmosphere. On May 31, 2012 the <u>Associated Press reported</u> that NOAA scientists at monitoring stations in the Arctic reported carbon and other climate pollution readings over 400 parts per million in the atmosphere.

Readings are coming in at 400 and higher all over the Arctic. They've been recorded in Alaska, Greenland, Norway, Iceland and even Mongolia. But levels change with the seasons and will drop a bit in the summer, when plants suck up carbon dioxide, NOAA scientists said

The International Energy Agency announced last month that there was a record 3.2 percent increase in worldwide carbon pollution from 2010. Worldwide, coal was responsible for 45 percent of these omissions.

Until 2006 the United States was the largest emitter of carbon and other pollution responsible for climate change. That dubious distinction now belongs to China. We are, however, the greatest cumulative historical contributor to the atmospheric pollution responsible for global warming. Therefore, we must begin to drastically reduce our carbon pollution to slow the impacts of global warming.

Public strongly supports EPA action according to opinion polls

A <u>March 2012 national poll conducted</u> for the American Lung Association by bipartisan pollsters found overwhelming support for standards to reduce carbon pollution from power plants. According to this survey 54 percent of Republicans, 72 percent of independents, and 87 percent of Democrats supported carbon pollution reductions. <u>The American Lung Association poll found</u> that:

Voters overwhelmingly believe such carbon standards will have a positive impact on air quality (74 percent) and public health (73 percent) and, more importantly, a 44 to 25 percent plurality believe they will have a positive impact on the economy and jobs.

After a balanced debate with messages in support of and opposition to new carbon standards, support still remains robust, near a 2-to-1 margin (63 percent favor, 33 percent oppose) nationally.

Even after the balanced messaging, independents continue to support the new standards by a 32-point margin (65 percent to 33 percent).

<u>Another national survey</u> released on April 26, 2012 by the Yale Project on Climate Change Communication and the George Mason University Center for Climate Change Communication found that:

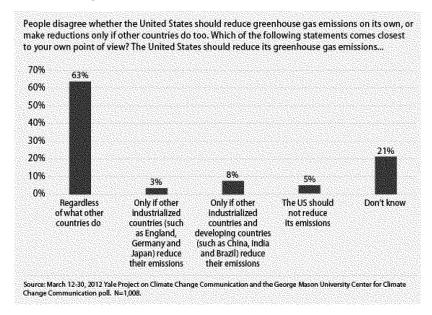
75 percent [of Americans] support regulating carbon dioxide as a pollutant. Among registered voters, 84 percent of Democrats, 77 percent of Independents, and 67 percent of Republicans support this policy [limiting pollution from new power plants].

Sixty-one percent of Americans also support holding the fossil fuel industry—coal, oil, and natural gas—responsible for all hidden public health costs associated with illness from air and water pollution. As the Yale Project reports, "68 percent of Democrats, 72 percent of independents, and 54 percent of Republicans support this policy."

Additionally, the Yale survey finds that by a 2-to-1 margin, Americans accurately understand that global warming makes a number of extreme weather events worse.

CAP's Ruy Teixeira further analyzed this poll and found the following results:

- 63 percent of respondents believe that the U.S. should reduce greenhouse gas
 emissions regardless of what other countries do; only 5 percent of respondents do not
 think that the U.S. should reduce its emissions.
- 62 percent of Americans support protecting the environment, even if it reduced economic growth.



The bipartisan <u>March 2012 poll from the American Lung Association</u> surveyed 2,400 likely Republican, Democratic, and independent voters and found 72 percent support carbon emissions standards for new and existing power plants. The pollsters found that:

After listening to a balanced debate with messages both for and against setting new carbon standards, support still remained robust with a near 2-to-1 margin (63 percent in favor and 33 percent opposed).

The Republican pollster Marc DelSignore, president of Perception Insight, concluded, "The poll does show there is broad support across partisan lines for new carbon regulations on power plants."

Supreme Court rules that Clean Air Act applies to global warming pollution

The Supreme Court provided another approach to reducing carbon pollution. It ruled in the 2007 case <u>Massachusetts v. EPA</u> that the Clean Air Act applies to carbon pollution responsible for global warming. The majority wrote that "greenhouse gases fit well within the Clean Air Act's capacious definition of 'air pollutant."

Based on this decision, EPA has the authority and responsibility to set limits on carbon pollution from mobile and stationary sources.

President Bush's EPA determines that carbon pollution endangers Americans

The first step in this process requires EPA to determine whether carbon pollution "endangers the public health and welfare." In 2008 then EPA Administrator Stephen Johnson made such a determination. He wrote President George W. Bush that an endangerment finding was warranted under the science and the law:

Your Administration is compelled to act on this issue under existing law.

The Supreme Court's *Massachusetts v EPA* decision still requires a response. That case combined with the latest science of climate change **requires the Agency to propose a positive endangerment finding.**.. the state of the latest climate change science does not permit a negative finding, nor does 'it permit a credible finding that we need to wait for more research.

Also within the next several months, EPA must face regulating greenhouse gases from power plants, some industrial sources, petroleum refineries and cement kilns.

Then-administrator Johnson reminded President Bush that he had legal obligation backed with ample scientific evidence to make an endangerment finding. He also told the president that the EPA must regulate carbon pollution from power plants and other sources. President Bush declined to act but that did not alter the legal or scientific reasons compelling action.

After Bush inaction, Obama administration complies with Supreme Court and makes "endangerment finding"

It fell to the Obama administration to review the science and make the endangerment finding. After nearly a year of review, including the issuance of the "Global Climate Change Impacts in the U.S." report, EPA Administrator Lisa Jackson followed the science and the law by issuing an endangerment finding for carbon and other pollutants. The Endangerment Finding observed that

air pollution "endanger[ed] both the public health and the public welfare of current and future generations."

The Endangerment Finding determined that well-mixed greenhouse gas air pollution is reasonably anticipated to endanger public health. For instance, EPA noted that scientists found that climate change will cause more frequent unusual hot days and heat waves. Heat is already the leading cause of weather-related deaths in the United States. This will intensify in magnitude and duration, threatening the lives and health of our most vulnerable people, particularly seniors.

The EPA determined that:

The populations most sensitive to hot temperatures are older adults, the chronically sick, the very young, city-dwellers, those taking medications that disrupt thermoregulation, the mentally ill, those lacking access to air condition, those working or play outdoors, and socially isolated persons.

The United States will also experience an increase in regional ozone pollution due to higher temperatures and poor air circulation. This will escalate the associated incidence of premature deaths and respiratory illnesses.

<u>Climate change</u> will also cause more extreme weather, including severe precipitation and floods, drought, and storms. This will increase deaths, injuries, infectious diseases, and stress-related disorders and other adverse effects.

The United States experienced record-setting extreme weather disasters in both 2010 and 2011, according to Federal Emergency Management Agency data. 2010 had 81 major disasters and 2011 had 99. These disasters included severe flooding, hurricanes, tornadoes, snowstorms and more. "Major disasters" qualify for a wide range of federal assistance programs, including funds for both emergency and permanent work.

NOAA reports that 14 disasters in 2011 cost more than \$1 billion in assistance to clean up, shattering the previous record from 2008. Scientists have been warning that accelerated climate change would increase the frequency or severity of many of these types of disasters.

For instance, floods cause deaths, injuries, infectious diseases, and post-event mental health problems. Last year was one of the worst years in U.S. history for floods, according to <u>data from FEMA</u>. The flooding of the Mississippi River in April and May 2011 set new records for water levels. This flooding killed at least 20 people and caused nearly \$4 billion in damages. The federal <u>Global Climate Research program found that</u> these sorts of floods can be expected more frequently as precipitation in the region continues to increase.

Some may challenge the endangerment finding, but it is important to note that the EPA's inspector general released a report in 2011 that found the endangerment finding met guidelines for ensuring that all decisions were based on robust scientific analysis and "followed requirements and guidance related to ensuring the quality of the supporting technical information"

The Inspector General report concluded that

EPA undertook a thorough and deliberate process in the development of this [endangerment] finding, including a careful review of the wide range of peer-reviewed science. Since EPA finalized the endangerment finding in December of 2009, the vast body of peer reviewed science that EPA relied on to make its determination has undergone further examination by a wide range of independent scientific bodies. All of those reviews have upheld the validity of the science.

After Endangerment Finding, Obama administration sets carbon reductions for motor vehicles

Once the endangerment finding was made, EPA was obligated to establish carbon pollution reduction standards. The two largest sources of this pollution <u>are transportation and electricity generation</u>, at 31 and 40 percent, respectively.

The Obama administration began the reduction of carbon pollution from motor vehicles. It reached a consensus about the proposed standards with most auto manufacturers, the United Auto Workers, California and other states, and public health advocates.

In 2010 the <u>Department of Transportation and EPA</u> finalized fuel economy and carbon pollution tailpipe standards for vehicles beginning in model year 2012 to 2016 vehicles that increase fuel economy to 35.5 mpg, and would limit carbon pollution to 250 grams per mile. These standards would save 960 million metric tons of carbon pollution over the life of the vehicles built between 2012-2016. The standards would also save 1.8 billion barrels of oil.

In November 2011 the administration proposed a second phase of modernized fuel economy and carbon pollution standards for vehicles built between 2017 and 2025. These <u>cars and light trucks</u> would have to average no more than

163 grams/mile of carbon dioxide (${\rm CO_2}$) in model year 2025, which is equivalent to 54.5 miles per gallon (mpg) if the vehicles were to meet this ${\rm CO_2}$ level all through fuel economy improvements.

This is also a consensus proposal made with most of the interests that agreed to the first round standards. This second phase would reduce carbon pollution by 2 billion metric tons over the lifetimes of the light duty vehicles sold between 2017 and 2025. They would also save 2.2 million barrels of oil per day. DOT and EPA expect to finalize these standards later this year.

<u>Heavy-duty trucks are the largest source of carbon pollution</u> in the transportation sector after light-duty vehicles—approximately 22 percent of all emissions. In 2011 the Obama administration established the first-ever fuel economy standards for these trucks, along with a limit on carbon pollution. The standards for model-year 2014 to 2018 heavy-duty trucks will reduce greenhouse gas pollution by 9 percent to 23 percent depending on the size class of the vehicle. The standards will also save 530 million barrels of oil during the lifetime of these vehicles.

The Hill reported that:

Similar to how previous fuel-efficiency rules were made, the Obama administration worked closely with industry groups to develop the heavy-duty truck standards. Navistar, Volvo, Chrysler, Conway and others all support the standards.

EPA "tailoring rule" limits carbon pollution reductions to largest sources

After EPA made the endangerment finding, and established limits on carbon pollution from motor vehicles, it was required by law to set carbon and other greenhouse gas pollution limits from new or significantly modified sources.

EPA took a common sense approach to this challenge by focusing on <u>new industrial sources</u> that emit more than 100,000 tons per year of carbon pollution, and on significantly modified facilities that increase their emissions by 75,000 tons per year. This "tailoring" rule includes the sources of about 70 percent of industrial carbon pollution. The rule applies to large power plants, oil refineries, chemical facilities and landfills. Smaller sources, including homes, bakeries, small businesses, churches, and family farms, are not covered by the rule.

These large new or significantly modified pollution sources must meet a "Best Available Control Technology" (BACT) standard, which considers technical feasibility, cost and other energy, environmental and economic impacts. Whether a proposed permit complies with BACT is a case-by-case decision made by state/local permitting agencies. The EPA encourages these agencies to use a "top-down" BACT review process, which has been employed for decades for other pollutants.

EPA issued its permitting guidance in November 2010. It included the following recommendations:

- o Energy efficiency will constitute BACT in most cases
- Carbon capture and storage (CCS) should be evaluated, but in most cases will not technologically feasible or affordable

The agency also issued recommendations for pollution control measures for seven large industrial sectors.

- o Power plants
- o Large industrial, commercial or institutional boilers
- o Pulp and paper manufacturing
- Cement manufacturing
- Oil refineries
- o Iron and steel manufacturing
- o Nitric acid plants

Of course lobbyists representing companies covered by the carbon pollution permitting requirements and their political allies issued a hue and cry that these requirements would slow or halt the construction of new or significantly modified facilities.

As usual, these concerns were vastly overblown. During the first year of the permit requirement, the estimated number of projects that met the carbon pollution thresholds has been less than both industry and EPA predicted. As of December 1, 2011, EPA and the state permitting authorities have issued 18 permits with carbon pollution limits. There were about 50 other permit applications pending – an average of one per state.

Inaction on these new sources of carbon pollution would be indefensible from both a legal and scientific perspective. EPA has crafted a system that focuses on the biggest potential pollution sources, while basing reductions on energy efficiency that should reduce pollution while saving these facilities money. In other words, the EPA approach will make these new facilities cleaner and more efficient, which is a win-win.

Reducing carbon pollution from future power plants

On April 13 the Environmental Protection Agency proposed the first-ever rules to limit carbon dioxide pollution from new power plants. Existing power plants are responsible for adding more than 2 billion tons of carbon and other toxic pollutants into the air each year—nearly 13,000 pounds for every man, woman, and child in the United States.

EPA's proposed standard to limit carbon pollution from new power plants is employing authority granted by <u>Clean Air Act</u>. It would only apply to:

New fossil-fuel-fired electric utility generating units, or EGUs. For purposes of this rule, fossil-fuel-fired EGUs include fossil-fuel-fired boilers, integrated gasification combined cycle units and stationary combined cycle turbine units that generate electricity for sale and are larger than 25 megawatts.

When final, the rules will <u>require new power plants</u> to emit no more than 1,000 pounds of carbon pollution per megawatt hour of electricity. This corresponds to a 40 percent to 60 percent decrease from what the typical new coal-fired power plant releases.

Requiring new power plants to take steps to limit their carbon pollution will force them to "internalize" or account for pollution that they would have otherwise emitted into the atmosphere. As noted earlier, society will bear the costs from this pollution due to more smog, deadly heat waves, severe floods, and other extreme weather events. These additional costs may make some of these proposed coal-fired power plants uneconomical, so they may be canceled.

Moreover, the additional cost to produce cleaner coal power from plants that are built should increase the economic incentive for utilities to instead invest in renewable electricity generated by the sun, wind, and other clean sources. As investments in clean power sources increase, their costs should decrease due to technological and manufacturing advancements. As a result, consumers will have more choices about where their energy comes from.

The carbon pollution standard provides certainty for utilities planning to build new power plants. Until now, utilities faced great uncertainty about what level of reduction—if any—would be required by future carbon pollution standards. The EPA's Regulatory Impact Analysis of this proposed rule determined that it:

Will reduce regulatory uncertainty by defining section 111(b) [Clean Air Act] requirements for limiting GHG from new EGU [electricity generation unit] sources.

Ralph Izzo, chairman and CEO of Public Service Enterprise Group, or PSEG, spoke favorably about the proposal because of the certainty it gives utilities. PSEG is a major unregulated independent power producer in the United States with nuclear, coal, and natural gas plants in four states. Rizzo said that the proposal:

Establishes a logical and modest standard for new electric power plants and provides the industry with much needed regulatory certainty. The EPA provides a framework for the industry to confront this problem in a cost effective manner.

In addition, some utilities have adequate financial resources to comply with the proposed standards. NRG Energy has plans to build a power plant in Texas that would emit 14.8 billion pounds of carbon pollution a year and be required to meet the EPA limits. It is unclear if NRG intends to actually build the plant. In 2011 NRG earned \$109 million in profit while also sitting on \$1.1 billion in cash reserves. NRG and other companies should invest in innovative technologies, such as carbon capture and storage, to meet the standard.

American Electric Power, which has a large number of coal plants and is <u>an opponent of other recent EPA safeguards</u>, does not anticipate abrupt negative economic impacts from the rule. Melissa McHenry, a spokeswoman for AEP, said:

In the near term, the impact will not be as great. It impacts the ability to expand the use of coal for electricity, but it doesn't cause immediate concern for us.

Global warming pollution and its damages will continue to grow without additional reductions from operating power plants, oil refineries, and other industrial sources.

Even without the proposed rules, electricity generation from coal has declined significantly, primarily due to low natural gas prices. New figures from the U.S. Energy Information Administration found that coal generated just 36 percent of U.S. electricity in the first quarter of 2012. This represents a nearly 20 percent decline in coal generation over the same time last year. As previously noted, this has led to a decline in carbon pollution from power plants in 2010 and 2011 that should continue through next year before rising again in 2013.

The proposed rule for new power plants would *slow the growth* of carbon pollution from any new coal fired power plants. It would not *reduce* atmospheric pollution. The EPA must follow the carbon pollution standard for new plants with one that reduces emissions from *currently* operating power plants—the source of 40 percent of U.S. carbon pollution.

Public Comments Overwhelmingly Favor Reducing Carbon Pollution from Power Plants

The EPA began collecting public comments on the proposed carbon pollution standard on April 13 and will continue until June 25. So far there is broad public support for EPA's proposal. Nearly two million people submitted comments in favor of the rule to EPA, with thousands of additional favorable comments arriving every day. In addition, there was overwhelming support for these rules at EPA's public hearings in May. These supporters also urged EPA to issue limits on carbon pollution from *existing* power plants. When all is said and done the comments on the carbon pollution standard will likely set a new record for public comments on a proposed EPA rule.

So-called war on coal is a special interest myth

Lobbyists from the coal mining and utility industries and their congressional allies recently claimed that the Obama administration has launched a "war on coal." This fear mongering has little basis in fact. The Obama administration has done more than any in memory to help the coal industry develop technologies to burn coal while reducing its carbon pollution, primarily through investments in research, development, and deployment of carbon capture and storage, or CCS, technology.

The American Recovery and Reinvestment Act included \$3.4 billion for CCS technology, including \$1 billion to revive the "Future Gen" clean coal plant that President George W. Bush had scrapped. The plant will generate 200 megawatts of electricity from coal combustion, with 90 percent capture of its carbon pollution. Emissions of other pollution will be "near zero." Future Gen 2.0 will employ 700 to 1,000 people during construction, and would require 100 to 125 employees to operate it.

Secretary of Energy Dr. Steven Chu noted that:

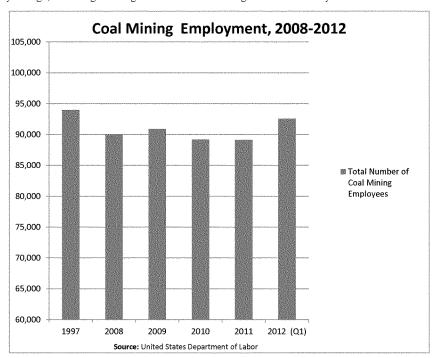
This investment in the world's first, commercial-scale, oxy-combustion power plant will help to open up the over \$300 billion market for coal unit repowering and position the country as a leader in an important part of the global clean energy economy.

Due to inexpensive natural gas and a variety of bureaucratic problems, the project is expected to be operational in 2017 instead of the original goal of 2015.

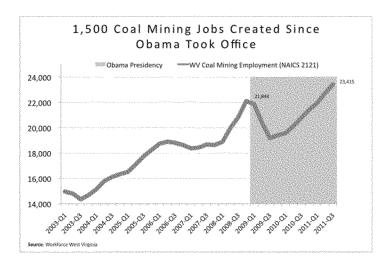
Additional ARRA funding has also gone towards new ways to gain energy from coal and make our current use of coal cleaner and more efficient. This includes investments in reducing carbon pollution from electricity generation and industrial facilities. This includes seven projects in addition to Future Gen 2.0. Two weeks ago the <u>Department of Energy</u> announced "clean coal research awards for universities across the country."

It is unclear whether all of these research and demonstration projects will succeed, but these significant investments in them demonstrate the Obama administration's commitment to coal generated electricity even with long overdue pollution reductions.

Employment figures also debunk this mythical war on coal. On November 18, 2011 <u>The Charleston Gazette</u> reported that "employment in the Appalachian mining industry is at a 14-year high, according to new government data and congressional testimony."



In West Virginia a recent report from the nonpartisan West Virginia Center for Budget and Policy showed coal mining jobs are actually rising in the state, with 1,500 new coal jobs added since 2009. In Pennsylvania, Energy Information Administration, or EIA, data shows a 2.3 percent increase in coal related jobs. And in Virginia, EIA data shows a 6.7 percent increase in coal mining employment from 2009 to 2010.



<u>Richard Morgenstern</u>, a former Reagan and Clinton EPA official, predicts that the new carbon pollution standard will have "no net impact" on employment.

EPA also predicts that its proposed <u>carbon pollution standard</u> for new power plants will have no impact on employment or existing coal plants. In fact, the standard simply complements existing market factors, as the EPA points out:

Because this standard is in line with current industry investment patterns, this proposed standard is not expected to have notable costs and is not projected to impact electricity prices or reliability.

So what is happening to coal? The shift away from coal and towards natural gas electricity generation is due to the low price for natural gas. A February 2012 analysis of coal plant retirements by the <u>Analysis Group</u> found that coal plant declines resulted from basic changes in market forces:

The sharp decline in natural gas prices, the rising cost of coal, and reduced demand for electricity are all contributing factors in the decisions to retire some ... coal-fired generating units. These trends started well before EPA issued its new air pollution standards.

<u>Coal industry executives</u> themselves say that low natural gas prices, a warm winter, and a sluggish economy are the primary reasons for coal mining worker layoffs. The <u>Bipartisan Policy Center</u> noted that industry-commissioned doomsday projections of economic losses from EPA standards are vastly exaggerated by including unrelated regulations and worst-case scenarios.

The Bipartisan Policy Center also found that, "Several investment analysts were conducted prior to EPA's [rule] proposal and made worst case estimates about what EPA was likely to require."

Another sign of the coal industry's health is that large coal companies continue to make huge profits. In 2011 the two largest companies, <u>Peabody Energy</u> and <u>Arch Coal</u>, made profits of \$958 million and \$143 million, respectively.

The National Academy of Sciences determined that the toxic, smog, and acid pollution from coal combustion for electricity generation in the United States costs Americans \$62 billion annually due to premature deaths, asthma attacks, other respiratory ailments, and lost work days due to illness

A 2011 study in the <u>New York Academy of Sciences</u> by the late Dr. Paul Epstein of Harvard Medical School and others projects that the "best estimates from literature" of the "climate damages from [coal] combustion emissions" is \$62 billion annually.

Burning coal without adequate pollution reduction equipment causes real medical and economic harms, particularly for children, seniors, the infirm, and other vulnerable populations.

EPA was compelled to issue reduction requirements for acid rain, smog, mercury, toxics, and carbon pollution now because the Bush administration attempted to establish pollution reductions on mercury and other pollutants that were weaker than required by the law. Because courts struck down these standards, we lost eight years when there could have been billions of pounds of pollution reductions that would have reduced the threat to public health. Such rules would have provided the utility industry with greater certainty than we have today to plan their future investments.

Coal and utility industry lobbyists, media flacks, and other influence-peddling mercenaries concocted this phony war on coal. In reality EPA is simply implementing the laws passed by overwhelming bipartisan majorities in Congress and signed by presidents of both parties to protect public health from myriad of air pollutants that come from coal fired power plants and other industrial sources.

China committed to carbon pollution reduction measures

As the largest historical contributor to atmospheric greenhouse gas pollution, the United States has a responsibility to reduce its emissions. In 2009 President Barack Obama committed the United States to reduce its pollution by 17 percent below 2005 levels by 2020. We are on track to meet that target. U.S. pollution in 2010 was 6 percent lower than 2005 levels. Additional reductions will come from the limits on carbon pollution from motor vehicles. The proposed limits on carbon pollution from new power plants will slow the growth of pollution from the electricity sector. Reductions from existing power plants, oil refineries, and other major industrial polluters are essential to meet the 2020 goal.

To slow the onrushing damages from climate change, other nations must also reduce their carbon pollution. Although the <u>United States is still the largest per-capita carbon pollution emitter</u> with 16.9 tons of carbon pollution per capita, it is only the second-largest annual emitter of carbon and other greenhouse gas pollutants. <u>China is the largest overall annual polluter</u>, providing 17 percent

of global emissions, but it only produces 6.8 tons of carbon pollution per capita. China's per capita emissions are growing, and some experts believe that it may surpass the United States in 2017

The Chinese economy is still developing and that means consumption and pollution patterns are still in flux. It is difficult to predict at what point Chinese pollution will finally peak and begin to decline.

It is essential that China make an international commitment to cap their emissions to avoid the most severe impacts of climate change. China has yet to do so. It has, however, made serous domestic commitments to reduce carbon pollution intensity (the amount of pollution per unit of GDP) and fossil fuel use. By 2020 the Chinese central government has committed to reduce carbon pollution per unit of GDP by 40 percent to 45 percent from 2005 levels. Non-fossil fuel energy sources accounted for 9.4 percent of China's energy in 2011. It plans to increase that percentage by 0.5 percent annually over the next four years to reach a 2015 target of 11.4 percent. It plans to reach 15 percent non-fossil fuel energy by 2020. Specific policies and programs to achieve these reductions include the following measures.

- Adopting mandatory carbon and energy intensity reduction targets at the national and
 provincial level. This includes a target responsibility system whereby which local
 government official promotions depend on their progress towards meeting carbon
 pollution and energy reduction targets.
- Closing inefficient power plants.
- Strengthening energy-efficiency programs and improving energy-efficiency codes for buildings.
- Drafting a plan to require electric grid companies to <u>purchase a set percentage</u> of their total power supply from renewable sources, which would create a stable market for renewable power generation projects. This national program is similar to many of our states' renewable electricity or portfolio standards. This renewable energy purchase quota may be set as high as <u>15 percent</u>, but will not be announced until 2013.
- Adopting renewable electricity <u>feed-in tariffs</u> to make solar and other renewables more price-competitive.
- Expand government investment in renewable electricity production.

Conclusion: House must lead pollution reduction efforts, not block them

The urgency to reduce carbon and other global warming pollution grows with every extreme weather event or new scientific findings about impacts from climate change. For instance, on June 16 *The San Francisco Chronicle* reported that Californians face an increase in the West Nile Virus due to global warming:

Cases of West Nile in birds and mosquitoes are already much higher than usual for this time of year.

The unusual [warm] winter combined with a wet spring probably contributed to the increase in cases because mosquitoes thrive in higher temperatures - they reproduce and mature from larva to adult faster. Plus, the virus replicates faster at higher temperatures.

Yesterday's <u>Washington Post</u> reported that sea-level rise due to climate changes threatens to inundate Norfolk, Virginia homes:

The entire city is worried. Miles of waterways that add to Norfolk's charm are also a major threat in the era of increased global warming and relative rising sea levels, as well as its odd and unique sinking ground.

The <u>National Academy of Sciences</u> published an analysis of scientific assessment of climate change, which found that active climate research had near unanimity that it is real and primarily due to human activity. This evaluation used:

An extensive dataset of 1,372 climate researchers and their publication and citation data to show that

- (i) 97–98% of the climate researchers most actively publishing in the field support the tenets of ACC [anthropogenic climate change] outlined by the Intergovernmental Panel on Climate Change, and
- (ii) the relative climate expertise and scientific prominence of the researchers unconvinced of ACC are substantially below that of the convinced researchers

Nonetheless, some members of this subcommittee and Congress continue to deny that climate change is real or caused by human activity. Ignoring the reams of scientific evidence will not, however, make this imminent threat go away. This approach is like disregarding the strange lump on one's chest X-ray even though 98 of 100 doctors urge prompt steps to remove it.

Unfortunately, during the last Congress the Senate failed to pass the House-passed American Clean Energy and Security Act, which would have reduced carbon pollution by at least 17 percent below 2005 levels by 2020. This bill would have protected public health from more smog, extreme weather, and tropical diseases, as well as created thousands of jobs by increasing investments in the \$2 trillion per year worldwide clean tech sector.

Instead of attempting to forestall this looming disaster, the actions of this subcommittee and the House of Representatives would hurry this day of reckoning. A <u>2011 analysis by the House Energy and Commerce Committee Democrats</u> found repeated attempts to thwart carbon pollution reduction measures. In <u>2011</u> the House cast:

27 votes to block action to address climate change, including votes to overturn EPA's scientific findings that climate change endangers human health and welfare; to block EPA from regulating carbon pollution from power plants, oil refineries, and vehicles; to

prevent the United States from participating in international climate negotiations; and even to cut funding for basic climate science.

In 2012, the House cast another 10 votes "to block actions that address climate change."

Earlier this month the House passed the <u>2013 Energy and Water appropriations bill</u>, H.R.5325, which would slice \$500 million of investments in solar, wind, and other renewable energy technologies. These investments would have created thousands of jobs while reducing carbon pollution. This bill also included "thirteen amendments...[that] target wind power, carbon-zero building standards, efficiency measures for lighting, batteries and more" according to <u>Inside Climate News</u>.

Unlike the House of Representatives, the Obama administration recognizes the climate change menace threatening Americans' health, welfare, jobs, and economy. It is using the tools provided in the Clean Air Act, and ordered by the Supreme Court, to reduce carbon pollution from motor vehicles and new power plants. The administration must also promptly establish pollution reductions for existing power plants, oil refineries, and other large sources of industrial carbon pollution.

After examining the proposed carbon pollution standard at these hearings today, we urge this subcommittee to help reduce the threat to Americans' health, safety, and jobs posed by climate change by heeding the words of <u>Four Star General George S. Patton</u>: "Lead me, follow me, or get out of my way."



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

WASHINGTON, D.C. 20460

January 31, 2008

THE ADMINISTRATOR

The President The White House Washington, D.C. 20500

Dear Mr. President:

You have committed the US to pursue new, quantifiable actions to reduce carbon emissions. These new actions should spur both private sector investment in developing new, cost-effective technologies and private sector deployment of these technologies at a large scale. I believe legislation is the best approach to achieve this. However, your Administration is compelled to act on this issue under existing law given the many lawsuits and petitions before the Environmental Protection Agency (EPA). It is my intent to do so in a way that is responsible and that does not foreclose a superior legislative solution.

First, the Supreme Court's <u>Massachusetts v EPA</u> decision still requires a response. That case combined with the latest science of climate change requires the Agency to propose a positive endangerment finding, as was agreed to at the Cabinet-level meeting in November. Some have noted that the Energy Independence and Security Act (EISA) enables implementation of your 20-in-10 plan without an endangerment finding. Even if that is true, a finding is still required by the Supreme Court case, and the state of the latest climate change science does not permit a negative finding, nor does it permit a credible finding that we need to wait for more research. EISA also did not change EPA's obligation regarding the regulation of vehicles although it did expand the Department of Transportation's authority in a way that will facilitate a joint rulemaking.

A second set of actions will be required by other imminent lawsuits and petitions. For instance, EPA has pending before it petitions seeking greenhouse gas standards for aircraft, marine vessels, and off-road vehicles. Also within the next several months, EPA must face regulating greenhouse gases from power plants, some industrial sources, petroleum refineries and cement kilns.

A robust interagency policy process involving principal meetings over the past eight months has enabled me to formulate a plan that is prudent and cautious yet forward thinking. This plan will fulfill your Administration's obligations under the Supreme Court decision and also will provide a response to the multiple pending lawsuits and petitions rather than risk additional unfavorable court action. Further, it follows your May 14th 2007 Executive Order and creates a framework for responsible, cost-effective and practical actions.

I want to thank you for talking with me about this plan when we met last month and, of course, I welcome your guidance as we move forward. After careful and sometime difficult deliberation, I have concluded that it is in the Administration's best interest to move forward with this plan in the next few weeks. I appreciate the senior-level discussions that have enabled me to develop this approach, and I look forward to working with other members of your team to discuss details and a rollout.

Attached is my plan.

Respectfully

Stephen L. Johnson

Privileged Communication to the President

EPA Climate Change Plan

Phase 1

- In response to the Supreme Court mandate in <u>Massachusetts v EPA</u>, issue a proposed positive endangerment finding for public notice and comment as agreed to in the policy process.
- In response to the direction in EISA, issue a proposed vehicles rule jointly with the Department of Transportation to implement the new EISA and address issues raised in the Supreme Court case.
- To address requirements under the Clean Air Act, issue a proposed rule to update the New Source Review program to raise greenhouse gas thresholds to avoid covering small sources and to better define cost-effective, available technology.

Timing: Proposal in March or April. Final by the end of 2008.

Phase 2

• Issue advanced notices covering remaining petitions, lawsuits and court required deadlines. This would enable EPA to frame issues for the legislative debate and to channel future rulemakings to pursue environmental protection in context of benefit-cost analysis, availability of existing technologies, energy security, and remaining useful life of affected facilities. *Timing: Spring 2008.*

Phase 3

 As required by EISA, issue a proposed renewable fuels rule following new authority provided by EISA. Note that the new EISA significantly altered the regulatory approach that EPA, in coordination with Department of Energy and the Department of Agriculture, must take.

Timing: Proposal by September 2008. Final rule in 2009, Additional administrative steps will be taken in 2008.

Mr. WHITFIELD. Thank you.

Dr. Chameides, you are recognized for 5 minutes.

STATEMENT OF WILLIAM L. CHAMEIDES

Mr. Chameides. Chairman Whitfield, Ranking Member Rush, and members of the subcommittee, thank you for inviting me here today to talk with you. My name is William Chameides, and I am the dean of the Nicholas School of the Environment at Duke University. I am an atmospheric scientist having spent much of my career studying the chemistry of the lower atmosphere and the im-

pacts of regional air pollution.

I am speaking to you today in my role as vice chair of the report "America's Climate Choices" issued by the National Research Council of the National Academy of Sciences. Our 2012 report was the capstone in a five-report series, and for your reading pleasure I brought a copy right here ready for anyone who wants to take me up on it. The report was carried out at the request of Congress and brought together more than 90 volunteer experts including top climates, social, and economic scientists, as well as leaders from the private sector, former office holders at both the Federal and State level. Our reports were all prepared according to the stringent National Academy guidelines for balance, objectivity, and peer review.

The report summarized what we know about climate change, and what kinds of response choices we face as a Nation. Some key takehome points: first, climate change is occurring, and the recent change is very likely primarily caused by the emissions of greenhouse gases from human activities and poses significant risks for a range of human and natural systems. Second, the environmental, economic, and humanitarian risks of climate change and its impacts indicate a pressing need for substantial action to limit the magnitude of climate change and to prepare to adapt to its impacts.

Third, we can always expect to face some uncertainties about future climate risks, but uncertainty is not a reason for inaction. Indeed, uncertainty cuts both ways. While climate change could ultimately prove to be less severe than current best estimates indicate, it could easily prove to be more severe. And finally, while current response efforts of local, State, and private-sector actors are significant, they are not likely to yield the degree of progress needed to achieve what we need without Federal policies.

Much of what we know about the climate is a product of more than 100 years of research founded on the most basic laws of science such as the first law of thermodynamics and grounded by observations of the climate system. While climate models play an important role in climate research, it would be incorrect to characterize global warming as conjecture based on climate models or

simulations.

As a context for today's discussion, here are some scientifically documented facts about the climate system. Thermometer measurements show that the Earth's average surface temperature has risen substantially over the past century, especially over the last 3 decades, and these data are corroborated by a host of independent observations. Carbon dioxide concentrations are higher today than they have been for at least the past 600,000 years. Most of the re-

cent warming can be attributed to fossil fuel burning and other human activities. Changes in solar radiation and volcanic activity can also influence the climate but observations show that they can-

not explain the recent warming trends.

In addition to our careful conclusions about what science has shown to be true about climate change, our report also highlights some motivating factors for why response efforts need to move ahead quickly. First, the faster the emissions are reduced, the lower the risks and the less pressure to make steeper and potentially more expensive reductions later. Second, current energy structure investments could lock in a commitment to substantial new emissions for decades to come. Enacting relevant policy now will provide crucial guidance for investment decisions. And finally, while policies can potentially be reversed or scaled back if needed, adverse changes in the climate system are likely to be difficult or impossible to undo.

To move ahead, the committee identified five broad areas of action: substantially reduce greenhouse gas emissions; begin mobilizing new actions for adaptation; invest in science, technology, and information systems; participate in international climate change re-

sponse efforts; and coordinate national response efforts.

My written testimony contains more information on these initiatives and the reports offer a detailed analysis of many different options. ACC has a recommendation to adopt a flexible approach that continuously assesses new information, scientific knowledge and technology advancers, and adjust responses according, an approach

we call integrated risk management.

Members of Congress, with each additional ton of heat-trapping gases we emit, we commit the world to further climate change and greater risks. It is much like a huge debt. Every time we emit more carbon dioxide to the atmosphere, we increase that debt and we will have to pay it down at some point. Our committee believes it is prudent even imperative to act now to limit and adapt to climate change.

Thank you very much for your attention. I will be happy to answer your questions.

[The prepared statement of Mr. Chameides follows:]

America's Climate Choices

Statement of
William L. Chameides, Ph.D.
Dean, Nicholas School of the Environment, Duke University
and
Vice-Chair, Committee on America's Climate Choices
National Research Council / National Academy of Sciences

Congressmen, colleagues: Thank you for inviting me to talk to you today. My name is William Chameides and I am the Dean of the Nicholas School of the Environment and Nicholas Professor of the Environment at Duke University. I am by training an atmospheric scientist, having spent much of my research career studying the chemistry of the lower atmosphere and thinking about the impacts of regional air pollution. In my research, I try to understand the causes of environmental change and identify pathways toward a more sustainable future.

I'm speaking to you today in my role as vice-chair of the report "America's Climate Choices," issued by the National Research Council of the National Academy of Sciences. Our 2012 report was the capstone in a 5-report series carried out at the request of Congress that brought together more than 90 experts from around the country to think collaboratively about the causes and consequences of climate change and the choices that could be made to respond.

I believe the ACC reports hold special credibility because they were prepared according to the stringent NAS guidelines for balance, objectivity, and peer review, and because they were developed by volunteer experts, including top climate, social, and economic scientists, as well as leaders from the private sector, and former office holders at the federal and state level. As a result of this breadth, we were able to address a diverse range of issues.

KEY MESSAGES

The ACC report series summarizes what we know about climate change and what kinds of response choices we face as a nation. Some key take home points include:

- Climate change is occurring, is very likely caused primarily by the emission of
 greenhouse gases from human activities, and poses significant risks for a range of human
 and natural systems. Emissions are continuing to increase, which will result in further
 change and greater risks.
- Some projected future impacts of most concern to the United States include more intense
 and frequent heat waves, risks to coastal communities from sea level rise, greater drying

of the arid Southwest, and increased public health risks. Impacts occurring elsewhere in the world can also deeply affect the United States, given the realities of shared natural resources, linked economic and trade systems, migration of species and disease vectors, and movement of human populations.

- The environmental, economic, and humanitarian risks of climate change and its impacts indicate a pressing need for substantial action to limit the magnitude of climate change and to prepare to adapt to its impacts.
- We can expect always to face some uncertainties about future climate risks, but
 uncertainty is not a reason for inaction. Indeed uncertainty cuts both ways—while
 climate change could ultimately prove to be less severe than current best estimates
 indicate, it could also prove to be more severe. It argues for approaching the problem
 though a process of iterative risk management.
- Current response efforts of local, state, and private sector actors are significant, but not
 likely to yield the degree of progress that could be achieved with the addition of strong
 federal policies that establish coherent national goals and incentives and that promote
 strong U.S. engagement in international-level response efforts.

WHAT IS KNOWN ABOUT CHANGES IN THE CLIMATE SYSTEM

As was once quipped by the esteemed Senator Daniel Patrick Moynihan, "Everyone is entitled to his own opinion, but not his own facts." Much of what we know about the climate and the phenomenon commonly referred to as global warming is the product of more than 100 hundred years of research, founded on the most basic laws of science such as the First Law of Thermodynamics and grounded by observations of the climate system. While climate models play an important role in climate research, it would be incorrect to characterize global warming as conjecture based on climate models or simulations.

There is, of course, much room for debate about what policies might be implemented to respond to climate change and its impacts, and about whether the costs of responding are worth the benefits. But this does not negate the substantial, credible body of scientific evidence about changes in the climate system. As context for today's discussions, here are some scientifically documented facts about the climate system:

- Thermometer measurements show that Earth's average surface temperature has risen substantially over the past century, and especially over the last three decades.
- These data are corroborated by a host of independent observations showing warming in
 other parts of the Earth system, including the oceans, the lower atmosphere, and icecovered regions. Further corroboration comes from shifting seasonal patterns, melting
 glaciers and permafrost, and rising atmospheric absolute humidity.

- Carbon dioxide concentrations are higher today than they have been for at least the past 600,000 years and we know from isotopic data that most of the increase over the past century has come from burning fossil fuels.
- Greenhouse gases such as carbon dioxide warm the atmosphere and the full impacts of
 greenhouse gas emissions on the climate do not fully manifest themselves for decades or
 centuries after they are added the atmosphere. Some of the carbon dioxide emitted to the
 atmosphere from the first Model T remains there today and some the carbon dioxide we
 will emit into the atmospheric on our way home tonight will be warming the atmospheric
 of our great-great-grand children.
- Most of the recent warming can be attributed to fossil fuel burning and other human
 activities that release carbon dioxide and other heat-trapping greenhouse gases into the
 atmosphere. Changes in solar radiation and volcanic activity can also influence climate,
 but observations show that they cannot explain the recent warming trend.
- Human activities have also resulted in an increase in small particles in the atmosphere, which on average tend to have a cooling effect, but this cooling is not strong enough to offset the warming associated with greenhouse gas increases.
- Natural climate variability leads to year-to-year and decade-to-decade fluctuations in temperature and other climate variables as well as significant regional differences.
- Human-caused climate changes and impacts will continue for many decades and in some
 cases for many centuries. The precise nature of these impacts cannot be predicted with
 great certainty. But the risks for human well-being are considerable and with each
 additional ton of greenhouse gases we emit we commit to further climate change and
 greater risks. The magnitude of climate change and the severity of its impacts will depend
 on the actions that human societies take to respond to these risks.

AN EFFECTIVE NATIONAL RESPONSE

As I noted earlier, the America's Climate Choices series of reports reviewed a vast array of current research and concluded that climate change is occurring, is very likely caused primarily by the emission of greenhouse gases from human activities, and poses significant risks for a range of human and natural systems. Our report also highlights some motivating factors for why response efforts need to move ahead quickly:

- The faster that emissions are reduced, the lower the risks, and the less pressure to make steeper and potentially more expensive reductions later.
- Current energy infrastructure investments could "lock in" a commitment to substantial new emissions for decades to come. Enacting relevant policies now will provide crucial guidance for investment decisions.
- Policy changes can potentially be reversed or scaled back if needed, whereas adverse
 changes in the climate system are likely difficult or impossible to "undo."

Our committee concluded that there are strong reasons for acting sooner rather than later, and that the risks of not taking action to deal with climate change seem to far outweigh the risks of taking action. We concluded that it is necessary to pursue both mitigation (meaning actions to limit the emissions of greenhouse gases and thus limit future climate warming) and adaptation (meaning moving ahead in wise ways to plan for how we will live with the impacts of changed climate). We also found that there are many "win-win" opportunities, where actions that would help in climate change mitigation or adaptation will also bring other substantial societal benefits, such as increasing energy independence, mitigating air pollution and the resulting health impacts, and reducing vulnerability to natural weather extremes.

To move ahead, the committee concluded that an effective, comprehensive national response would need to encompass the following five broad areas of action:

- (1) Substantially reduce greenhouse gas emissions. In order to minimize the risks of climate change and its most adverse impacts, the nation will need to reduce greenhouse gas emissions substantially over the coming decades. The exact magnitude and speed of emissions reduction depends on societal judgments about how much risk is acceptable and at what cost. However, given the long lifetime associated with infrastructure for energy production and use (among other factors), the most effective strategy is to begin ramping down emissions as soon as possible.
 - The most effective way to amplify and accelerate current state, local, and private sector efforts, and to minimize overall costs of meeting a national emissions reduction target, is with a comprehensive, nationally-uniform price on CO₂ emissions, with a price trajectory sufficient to drive major investments in energy efficiency and low-carbon technologies. In addition, strategically-targeted complementary policies are needed to ensure progress in key areas of opportunity where market failures and institutional barriers can limit the effectiveness of a carbon pricing system.
- (2) Begin mobilizing now for adaptation. Prudent risk management involves advanced planning to deal with possible adverse outcomes—known and unknown—by increasing the nation's resilience to both gradual climate changes and abrupt disaster events. Effective adaptation will require the development of new tools and institutions to manage climate-related risks across a broad range of sectors and spatial scales. Adaptation decisions will be made by state and local governments, the private sector, and society at large, but those efforts will be much more effective with national-level coordination, for instance, to share information and technical resources for evaluating vulnerability and adaptation options.
- (3) Invest in science, technology, and information systems. Scientific research and technology development can expand the range, and improve the effectiveness of, options to respond to climate change. Systems for collecting and sharing information, including

formal and informal education, can help ensure that climate-related decisions are informed by the best available knowledge and analyses, and can help us evaluate the effectiveness of actions taken. Many actors are involved in such efforts. For instance, technological innovation will depend in large part on private sector efforts; while information, education, and stakeholder engagement systems can be advanced by non-governmental organizations and state/local governments, with support from the federal government.

- (4) Participate in international climate change response efforts. America's climate choices affect and are affected by the choices made throughout the world. U.S. emissions reductions alone will not be adequate to avert dangerous climate change risks, but strong U.S. efforts will enhance the nation's ability to influence other countries to do the same. Also, the United States can be greatly affected by impacts of climate change occurring elsewhere in the world, so it is in the country's interest to help enhance the adaptive capacity of other nations, particularly developing countries that lack the needed resources and expertise. Effectively addressing climate change requires both contributing to and learning from other countries' efforts.
- (5) Coordinate national response efforts. An effective strategy requires coordination among a wide array of actors. This includes balancing rights and responsibilities among different levels of government (vertical coordination), assuring clear delineation of roles among many different federal agencies and other types of organizations (horizontal coordination), and promoting effective integration among the different components of a comprehensive climate change response strategy (e.g., all of the various types of efforts discussed in the previous recommendations).

The ACC reports offer detailed analysis of many different options (including technologies, policies, and strategies) that one could potentially pursue in each of these areas of action.

FINAL THOUGHTS

An important feature of our report is the recommendation that America's climate choices be driven by an iterative risk management approach. We are unable to prescribe a response to climate change today that we know will be optimal for decades to come. Instead, we need a process of systematically identifying risks and possible response options, advancing a portfolio of actions that emphasize risk reduction and are robust across a range of possible futures, and revising responses over time to take advantage of new knowledge, information, and technological capabilities. Flexibility and adaptability are key.

America's climate choices are about the decisions we as a nation need to make in the face of risks that are growing with every new ton of greenhouse gases emitted into the atmosphere. The risks of climate change are great, but we will never be able to predict the future with absolute certainty. Because emissions added to the atmosphere today will influence climate for hundreds of years to come, we believe it is imperative to act now to limit and adapt to climate change; it would not be prudent to wait for greater certainty about future climate change. But because of the lack of certainty, we recommend a flexible approach that continuously assesses new information and knowledge and adjusts responses accordingly.

Thank you for your attention. I would be happy to answer your questions.

** The information summarized in this testimony primarily reflects the 2012 report "America's Climate Choices" published by the National Academies Press. Committee Members included: Albert Carnesale (Chair), University of California, Los Angeles; William Chameides (Vice-Chair), Duke University, VA; Donald F. Boesch, University of Maryland Center for Environmental Science, Cambridge; Marilyn A. Brown, Georgia Institute of Technology; Jonathan Cannon, University of Virginia; Thomas Dietz, Michigan State University; George C. Eads, CRA Charles River Associates, Washington, DC; Robert W. Fri, Resources for the Future, Washington, D.C.; James E. Geringer, Environmental Systems Research Institute, Cheyenne, WY; Dennis L. Hartmann, University of Washington, Seattle; Charles O. Holliday, Jr., DuPont (Ret.), Nashville, TN; Diana M. Liverman, University of Arizona and University of Oxford, UK; Pamela A. Matson, Stanford University, CA; Peter H. Raven, Missouri Botanical Garden, St. Louis; Richard Schmalensee, Massachusetts Institute of Technology; Philip R. Sharp, Resources for the Future, Washington, DC; Peggy M. Shepard, WE ACT for Environmental Justice, New York, NY; Robert H. Socolow, Princeton University, NJ; Susan Solomon, National Oceanic and Atmospheric Administration, Boulder, CO; Bjorn Stigson, World Business Council for Sustainable Development, Geneva, Switzerland; Thomas J. Wilbanks, Oak Ridge National Laboratory, TN; Peter Zandan, Public Strategies, Inc., Austin, TX; Laurie Geller (Study Director), National Research Council.

Some material from other reports in the America's Climate Choices series is also included (Advancing the Science of Climate Change, Limiting the Effects of Future Climate Change, Adapting to the Impacts of Climate Change, and Informing an Effective Response to Climate Change) were requested by Congress and funded by NOAA. Copies of the reports are available from the National Academies Press, 500 Fifth Street NW, Washington, D.C. 20001; (800) 624 6242; www.nap.edu

Mr. WHITFIELD. Thank you very much. And Dr. Cox, you are recognized for 5 minutes.

STATEMENT OF LOUIS ANTHONY COX, JR.

Mr. Cox. Chairman Whitfield, Ranking Member Rush, members of the subcommittee, thank you for your invitation to be here this morning. My name is Tony Cox and I am an expert in risk analysis. I am going to discuss health risks related to regulation of greenhouse gases.

Several recent high-profile articles in scientific journals and in the press have announced that tighter regulation of air emissions will save lives. The claim is that reducing emissions of air pollutants including greenhouse gases will quickly reduce mortality rates, especially among the elderly. For example, a typical headline from earlier this year is, "Cuts in methane soot emissions quickly save lives, climate, and crops." Mr. Rush earlier alluded to healthier constituents from lower emissions. And this is a common perception. I will address the truth and certainty of such claims.

The most important thing to know about them is that these predictions are not based on real-world experience showing that reducing emissions actually does cause lower mortality rates. They do not come from careful causal analysis of real data. Instead, they are based on hypothetical computer model projections and on unverified statistical assumptions. No real health effects caused by

current ambient pollutant levels have been established.

For example, the underlying scientific articles suggesting health benefits might look at the fact that heart attack rates have decreased over many years and arbitrarily assume that some or all of this decline is caused by reductions in air pollution. Or they might observe that more elderly people die in winter when pollution levels are high and assume that a large fraction of the deaths are caused by pollution. But more careful causal analysis suggests that these conclusions do not follow from the data. When testable causal hypotheses about pollution health effects are formulated and compared to data, they turn out to be mistaken. Predicted physiological changes in the individuals and mortality changes in populations do not actually occur following changes in pollution levels. What is left is a set of ambiguous statistical associations that have no clear health implications.

The second thing to understand is that the raw data on pollution and health effects are actually quite ambiguous. They do not clearly show that current or recent levels of air pollution cause increased mortality or morbidity rates. Instead, there is no clear evi-

dence of any causal relation between them.

Some studies report significant positive associations. Many others show significant negative associations. For ozone, for example, higher concentrations are commonly associated with lower morbidity rates. Scientists at EPA and elsewhere have ignored such negative associations and chosen to consider only positive values in preparing their projections of positive health benefits from further reductions in air pollution. They assume that positive associations are causal while noting in the fine print that this has not actually been established.

In any case, data on historical associations between past levels of pollution and past levels of health effects, such as the data that EPA primarily relies on, do not actually address the question that policymakers should care about most. They do not predict what future changes in health effects would be caused by future changes in pollutant levels. Current projection of health benefits from further emissions reductions rest on a mix of wishful thinking and bad statistics.

The third thing to know is that it is possible to do better using more objective methods of causal analysis. The key to obtaining more trustworthy projections is to use rigorously validated causal models and objective tests of causal hypotheses about health effects of pollutants.

Many such rigorous tests are now available in computational statistics and related fields. They rely on sound principles such as that a true cause should help to predict its effects and that a true effect should be preceded by its alleged causes. But these important required properties are not true for the relation between air pollution and mortality rates in data that I and others have analyzed.

In summary, I urge you not to believe claims that reducing greenhouse gases and other emissions create large human health benefits. These claims rest on unverified assumptions and subjective interpretations, not on validated causal models or real-world facts. The more care that is taken to use appropriate methods of causal analysis the more previous claims of beneficial health effects melt away. What is left offers no objective reason to believe that ever-lower emission levels will cause ever-better health.

The point of diminishing returns in health benefits was probably reached long ago. And now, we should not expect new benefits from new emissions reductions. The time has come to stop relying on expert judgment and subjective interpretations of data and to start applying rigorous objective causal analysis. I believe that doing so will show that regulation of greenhouse gases cannot confidently be expected to produce human health benefits. Careful study of real-world causes and effects using objective causal analysis of emissions and health effects data will provide a much more trustworthy guide to the true probable health consequence of policy decisions than today's mix of wishful thinking and dramatic claims.

Thank you for your attention.

[The prepared statement of Mr. Cox follows:]

STATEMENT OF

LOUIS ANTHONY (TONY) COX, JR., PH.D.

tcoxdenver@aol.com

PRESIDENT, COX ASSOCIATES

ON

THE AMERICAN ENERGY INITIATIVE

BEFORE THE

U. S. HOUSE COMMITTEE ON ENERGY & COMMERCE,

SUBCOMITTEE ON ENERGY AND POWER

JUNE 19, 2012

Summary

Several recent high-profile reports by scientists at NASA, EPA, and elsewhere, have stated that further reducing air pollution emissions would slow climate change and create significant human health benefits, including reducing death rates among the elderly. These predictions ignore the known effects of temperature on elderly mortality rates (cooler winter temperatures increase, and warmer temperatures decrease, average elderly mortality rates), and instead focus on model-projected public health benefits from cleaner air. However, these claimed health benefits are illusory. They rest on a technically unsound approach that consists of finding (or creating or simply assuming) positive statistical associations between historical levels of pollutants and adverse health effects; using the opinions of selected experts to interpret these associations as causal; and then using the assumed (but not factually established) causal relations to project how reducing future exposures will reduce future health risks. EPA, among others, constrains the questions asked and the allowed answers to guarantee predicted positive health benefits from further regulation. This process is not a reliable guide to the truth. Historical associations do not provide a sound basis for predicting health effects caused by future changes in exposures. Real-world data typically contradict the assumptions and conclusions of models that predict that reducing emissions will cause significant health benefits.

It is possible to develop more credible and accurate predictions of health effects by applying relatively objective, reliable methods for causal analysis of data to air pollution and health effects data. Doing so typically reverses conclusions based on expert opinions and associations, showing that claimed significant health benefits from reduced emissions disappear when examined rigorously. At present, strong claims and exciting headlines about the health benefits of reduced emissions should be regarded as products of wishful thinking and poor statistics. More objective methods of causal analysis can and should be used instead.

U.S. House Committee on Energy & Commerce

Subcommittee on Energy and Power

The American Initiative

June 19, 2012

Chairman Whitfield and Members of the Subcommittee, thank you for inviting me to discuss health risk analysis aspects of greenhouse gas regulations. One way in which policies to reduce greenhouse gas emissions and other air pollution emissions have been promoted recently is to claim that they will not only slow climate change, but that they will also create significant human health benefits from cleaner air (e.g., Shindell et al., 2012; EPA, 2011; Fann et al., 2012; Yim and Barrett, 2012, www.prnewswire.com/news-releases/air-pollutant-levels-of-particulates-and-ozone-add-to-public-health-burden-138843874.html, NHS, 2012). This claim has been advanced in prestigious scientific journals and by prominent scientists. It tells policy makers and the public that they can confidently expect a double win – health benefits and climate goals – by more tightly regulating emissions. This encouraging prediction is based on selected statistical and computer models which project that significant health benefits, including reductions in mortality rates, will almost immediately following reductions in air pollution. I will address what we know about the truth and certainty of this assertion.

False Positives and Exaggerated Benefits Claims are Common in Health Effects Research

Unfortunately, the projected health benefits in these studies and press releases are firmly based on wishful thinking and bad statistics. They do not reflect what *does* happen in the real world,

but only what would happen if the assumptions and beliefs of selected experts were correct. They ignore the real effects on human health of changes in temperature – cooler winter temperatures increase mortality rates among the elderly, and warmer temperatures reduce elderly mortality rates (e.g., Mercer et al., 2003) – to focus instead on model-based predictions of health effects from pollution. Real-world data contradict the assumptions and conclusions of the models that predict further health benefits from further reductions in emissions (e.g., Wittmaack, 2007, Moore et al., 2012). The frequently repeated causal claim that tighter regulation will produce further health benefits does not hold up when rigorous methods of causal analysis and hypothesis testing are used to test it. Such tests have too seldom been used in the recent scientific literature on projected health effects of air pollutants.

Misplaced optimism that various interventions will cause health benefits has become widespread and well-documented in recent years (Ottenbacher, 1998; Imberger et al., 2011, loannadis, 2005). It is part of an epidemic of false-positive conclusions and optimistically biased claims in scientific articles, discussed last month in the top science journal, Nature (Sarewitz, 2012). That piece warns that, since the early 1990s, "Science's internal controls on bias were failing, and bias and error were trending in the same direction – towards the pervasive overselection and over-reporting of false positive results." As a possible explanation for this trend, the author notes that, "Scientists are rewarded both intellectually and professionally, science administrators are empowered and the public desire for a better world is answered" by these overly optimistic beliefs and claims. These warnings apply forcefully to recent work by EPA and others in projecting health benefits from further reductions in air pollutants (EPA, 2011; Fann et al., 2012; Shindell et al., 2012; Yim and Barrett, 2012).

Unjustified Causal Conclusions are Created by Asking Experts to Interpret Associations

A standard approach to generating false-positive results has developed in air pollution health effects research, and it is widely followed. Its two main steps are as follows.

- Step 1 is to identify a positive statistical association between exposures and health effects. This can always be done. It is easy for a statistician or epidemiologist to select models and assumptions that guarantee a positive result. For example, dividing a positive number of deaths or illnesses observed in a city during some interval of time by a positive average concentration of a pollutant over that interval will necessarily give a positive estimated ratio of deaths per unit of concentration, even if there is no causal relation between them. As another example, if both heart attack risks and pollutant levels are trending down in a city, due to independent causal reasons such as better prevention and treatment of one and tighter regulatory standards for the other, then comparing heart attack risk rates when pollutant levels were high to rates some years later, when both are lower, will show that risk decreases with pollutant levels. It would take be a bold leap to interpret such arithmetic as telling us anything about causality, but many health effects researchers are willing to make such leaps, and to publish and cite the results as clearly demonstrating causality (e.g., Clancy et al., 2002, Harvard School of Public Health, 2002, Hůnová et al., 2012). The statistical models and methods deployed are usually (but not always) more sophisticated than in these examples, but the basic logic is the same: choosing a statistical model and some assumptions can always produce positive statistical associations.
- Step 2 is to ask selected experts whether they believe the statistical associations are causal (EPA, 2011, Fann et al., 2012b). If the question is framed the right way, and the right experts are selected, they will usually say yes, or provide high subjective confidence levels that the answer is yes, even if there is no objective basis in the data for an opinion about causality. Experts who have devoted substantial parts of their careers to air pollution health

effects research may feel that if pollutant concentrations are lower than they used to be and mortality rates are lower than they used to be, then it is perfectly clear that one caused the other (e.g., <u>Harvard School of Public Health, 2002</u>), with no need for further inquiry or rigorous statistical tests of causal hypotheses (<u>Fann et al., 2012b</u>). These are the experts who tend to end up providing expert opinions about causality to EPA. Even if more cautious scholars subsequently showed that the decline in mortality rates was unrelated to pollutant reductions, proceeding just as quickly with or without them (<u>Wittmaack, 2007</u>), so that a valid causal link cannot be established from the data (<u>Pelucchi et al., 2009</u>, <u>NHS, 2012</u>), the myth that one has been established persists (<u>Moshammer, 2010</u>). Calculations of disease burdens said to be caused by or attributable to air pollution, based on the original flawed causal interpretations, soon propagate in the literature (e.g., <u>Röösli et al., 2005</u>), and other experts advising EPA continue to cite the flawed study as a valuable source of evidence (e.g., <u>Pope, 2010</u>). But all that is really happening is that experts in health effects research literature are offering and citing their own and each other's opinions, without any objective basis in data for supporting such causal conclusions.

These two steps base policy-relevant causal conclusions and predictions on selected expert opinions about *statistical associations*, rather than on proved or rigorously tested *causal relationships*. But, logically, statistical associations only describe whether past observations of exposures and health effects tended to be high or low together. They do not in general correctly predict how a future change in one would affect the other (e.g., <u>Freedman, 2004, Moore et al., 2012</u>). Yet, this is precisely the practical question of greatest interest to policy makers. Addressing it using statistical associations (as in <u>EPA, 2011</u>; <u>Fann et al., 2012</u>; <u>Shindell et al., 2012</u>; and <u>Yim and Barrett, 2012</u>) is technically incorrect and misleading: considerable knowledge of causal mechanisms, rather than extrapolation from historical associations, is required to correctly answer how changes in exposures will affect future risks (<u>Freedman, Freedman, Freedman,</u>

2004). At present, the few rigorous statistical tests of hypothesized causal mechanisms that have been performed for air pollution health effects show that predicted changes did not occur, suggesting that the gap between association and true causation is wide (Kaufman et al., 2007).

EPA and Others Constrain All Estimated Health Effects of Regulation to be Positive

The use of statistical associations to address causal questions about health effects of regulation is not only technically incorrect, but, as practiced by EPA and others, is also highly misleading to policy makers. A positive statistical association between exposures and health effects may exist, or be created by selecting models and assumptions, even if the causal relation between them is non-existent or negative. For example, in assessing human health benefits of the 1990 Clean Air Act Amendments, EPA (2011) selected technical methods that guaranteed positive answers. (Technically, they chose a Weibull uncertainty distribution to quantify the size of the uncertain reduction in mortality caused by a unit reduction in the concentration of fine particulate matter. The Weibull distribution assigns 100% probability to positive values and zero probability to negative (or zero) values, no matter what the data show (Cox, 2012).) Thus, EPA guaranteed that the only possible conclusion would be that reductions in air pollution saved lives, even if rigorous causal analysis of data showed no effect at all. This positive conclusion was the one that EPA announced to the press and to Congress. The possibility that no causal relation exists, so that pollutant reductions would not cause the human health benefits being attributed to them, was briefly acknowledged in one table of the report (EPA, 2011, Table 5-11), but was disregarded in the quantitative uncertainty analysis and in subsequent public presentations and discussions of these and related results (Fann et al., 2012, 2012b).

Artificial selection of positive findings has flooded the scientific and policy literatures with confident, but unjustified, projections of significant human health benefits from additional regulation of air pollutants. Although analyses such as EPA's insist on disregarding all negative

findings, and consider only all positive values (EPA, 2011), many significant negative associations have been found between levels of various criteria air pollutants (e.g., NO2 (Kelly et al., 2012), PM2.5 (Krstić 2010) and ozone (Powell et al., 2012)) and short-term mortality and morbidity rates. As noted by Powell et al. (2012), "The health risks associated with short-term exposure to air pollution have been the focus of much recent research, most of which has considered linear Concentration-Response Functions (CRFs) between ambient concentrations of pollution and a health response. A much smaller number of studies have relaxed this assumption of linearity, and allowed the shape of the function to be estimated from the data. However, this increased flexibility has resulted in CRFs being estimated that appear unfeasible, often showing decreases in the risk to health with increasing concentrations." Various health effects researchers therefore recommend constraining statistical modeling to show only nonnegative associations between air pollution exposures and adverse health effects, no matter what the data show (e.g. Powell et al., 2012, Roberts, 2004).

A simpler way to guarantee positive findings is to simply assume that risk is proportional to exposure, or that a positive fraction of adverse health outcomes is "attributable" to exposures (Ezzati et al., 2006). This is now the standard approach used to assess air pollution health risk burdens, leading to conclusions that even low levels of pollution create substantial burdens of mortality and morbidity (e.g., Elliott and Copes, 2011). However, such "findings" only reflect the starting assumptions that exposure causes risk, and that an increase or decrease in exposure will cause a proportional increase or decrease in health risks. Projections of health benefits based on such circular reasoning are liable to prove disappointing when true causal relations do not match assumptions. In practice, the assumptions that lead to predictions of health benefits from further regulation of emissions are contradicted by experience. Even substantial reductions in pollutants have had no detectable effect on mortality rates or other health effects (contrary to predictions, subjective interpretations, and some earlier statistical modeling) (e.g., Wittmaack,

2007, Moore et al., 2012) and have failed to produce the physiological changes that they were expected and hypothesized to cause (<u>Kaufman, 2007</u>). Belief in further health benefits from further reductions in emissions is premature.

Doing Better: More Objective Tests for Causality Are Readily Available and Should be Used

The current literature on health effects of air pollution abounds with false positives, unjustified causal claims, and unrealistic projections of health benefits of air pollution regulation and emissions reductions (e.g., <u>Fann et al., 2012b</u>, <u>Shindell et al., 2012</u>; and <u>Yim and Barrett, 2012</u>). These claims are technically unsupportable and that should never have been made (<u>Cox. 2012</u>).

This state of affairs is unnecessary. Excellent methods for answering causal questions more correctly and objectively have been developed over the past six decades, primarily outside the air pollution health effects literature. Air pollution health effects researchers should make greater use of them. Conversely, they should stop relying on expert interpretations of ambiguous (real or assumed) statistical associations as a basis for making health claims. Unlike expert judgments about the causal interpretation of statistical associations, modern technical methods of causal analysis can be independently replicated by others based on data, using standard statistical methods and software. They address the following key factual questions.

 Is there objective evidence of an effect (e.g., a significant change in a health effects time series following a change in exposures)? (Modern technical methods for answering this question include change-point analysis (<u>Friede et al., 2006</u>), intervention analysis (<u>Helfenstein, 1991</u>; <u>Gilmour et al., 2006</u>), and panel data analysis (<u>Stebbings, 1976</u>).) Such formal tests may give very different answers from subjective expert interpretations of the same data (<u>Wittmaack, 2007</u>). Panel data analysis examines how well changes in

- explanatory variables predict changes in responses. The results are often very different from those predicted by regression models of health effects of air pollutants (Stebbings, 1976).
- If an effect exists, how large is it? (This may be assessed via intervention analysis, change-point models, panel data, or quasi-experimental pre-post comparisons (<u>Campbell and Stanley, 1966</u>), with counterfactual causal models untangling the effects of confounders and estimating the remaining effect specifically caused by exposures (<u>Moore et al., 2012</u>).)
- 3. Can changes in health effects over time be explained or predicted as well without knowledge of a pollutant levels as with it? (This key question can be answered using objective statistical tests for causal hypotheses, such as Granger tests (Eichler and Didelez, 2010) for multiple time series; conditional independence tests for time series or cross-sectional data (Freedman, 2004, Friedman and Goldszmidt, 1998), and quasi-experimental analyses to refute other (non-causal) explanations that threaten valid causal inference (Campbell and Stanley, 1966; Maclure, 1990).)
- 4. Are changes in causal predecessors predicted by hypothesized causal mechanisms actually observed? This can be addressed using causal graph models and panel data analysis applied to biomarker data (<u>Hack et al., 2010</u>).

Such methods of causal analysis are vastly more powerful guides to objective truth than the current procedure of asking selected experts to offer opinions about causality based on (usually ambiguous and non-causal) statistical associations.

Conclusions

Taking seriously the need to apply more objective methods to assess causality in air pollution health effects research suggests the following policy-relevant conclusions.

- Expert judgment-based assessments of causality, and causal interpretations of statistical
 associations, (used at EPA, WHO, and elsewhere) are unreliable and prone to error and
 bias. The warnings of methodologists (<u>loannidis</u>, 2005; <u>Sarewitz</u>, 2012) about prevalent
 biases toward false-positives and inflated estimates of the benefits caused by interventions,
 appear to apply forcefully to air pollution health effects and accountability research. They
 should be heeded.
- It is possible and practical to do better. More objective methods for causal analysis are now
 readily available. Using them can eliminate much of the current speculation and ambiguity
 surrounding causation in health effects research, and correct erroneous preconceptions.
- The credibility of expert opinions or analyses leading to conclusions about causation, and the credibility of health benefits projections based on them, should be assessed based on how well they provide sound, independently reproducible, answers to specific causal questions. These questions include whether changes in exposures do in fact precede, and uniquely help to explain or predict, changes in health effects. Passionate or confident beliefs asserted by regulators and subject matter experts who have not yet answered these questions using data and independently reproducible analyses should be regarded as expressions of personal belief, not answers to scientific questions.

These recommendations could promote future health benefits estimates for emissions reductions that are more realistic, and more solidly based on reproducible science and data, than those driving headlines and calls for further regulation today. They would reduce needless controversies over the interpretation of ambiguous statistical associations; focus attention on the sizes of demonstrable real-world causal impacts; and shift the emphasis of health effects claims for emissions reductions toward more objective and independently verifiable risk analysis. Health benefits from emissions reductions might well turn out to be undetectably small in some cases (Wittmaack, 2007). Using sound causal analysis is the best way to find out.

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Mr. WHITFIELD. Thank you very much. And Mr. Sweeney, you are recognized for 5 minutes.

STATEMENT OF GERRY SWEENEY

Mr. Sweeney. Chairman Whitfield, Ranking Member Rush, and subcommittee members, thank you for the opportunity to testify before you on EPA greenhouse gas regulation. My name is Gerry Sweeney. I am president and CEO of Rain CII Carbon.Rain CII Carbon is one of the largest producers in the world of a product called calcined petroleum coke. We have seven U.S. facilities and employ over 250 workers in highly paid industrial jobs here in the United States. We also have operations in India and in China. The majority of our U.S. product is exported.

Another aspect of Rain CII's business is energy cogeneration. It is important to note that cogeneration of energy is very important to our competitiveness. It allows us to capture byproduct heat and lower our costs, while reducing greenhouse gas emissions. Three of our facilities in the U.S. have cogeneration plants and our fourth

is under construction currently.

Rain CII and the industrial business community are concerned about the existing and future regulation that create uncertainty and threaten high costs, both of which stymie capital investment, job creation, and impair competitiveness of existing facilities. To be clear, the business community is not against responsible clean air regulation. What regulation we put in place must be necessary and

not sacrifice industrial competitiveness and jobs.

Specific to greenhouse gas emissions, policies that provide incentives such as investment tax credits, grants, or accelerated depreciation are more effective and create jobs and are a preference to more regulation. It is a concern that our facilities would be regulated under the Clean Air Act Tailoring Rule for facilities that emit 100,000 tons per year and would require a permit under the Prevention of Significant Deterioration, or PSD, Preconstruction Permit Program and Title V Operating Permit Program. Both are lengthy and costly programs. We know this because we are already regulated under them.

Our experience is that regulations, while well-meaning, can be conflicting in purpose, reduce competitiveness, and result in less-than-optimal environmental benefit. We believe this will be the result when EPA promulgates regulation of greenhouse gases under

the Clean Air Act.

EPA greenhouse gas regulations will impact the manufacturing sector in two ways: one is from higher costs placed directly on our operations, and secondly, through higher electricity prices that get passed on to us. A loss of jobs will result from both burdensome

cost and bureaucratic delay.

For instance, we sit before you today waiting for a determination by EPA on the impact of Acid Rain Program, CAIR, and the Cross-State Air Pollution Rule on an existing energy cogeneration project now under construction and upon which we have had discussions with the EPA over the last 5 months. It is an example where the rules have become so complicated and the programs so overlapping that significant delay is involved in attempting to interpret requirements even though EPA has competent and well-meaning professionals examining the project. The delay exists even though the project is a "green" cogeneration facility that will result in significant reductions in greenhouse gas and criteria pollutants, increase jobs, competitiveness, and generate tax revenue for the government.

Delays and regulatory uncertainty cause industry to avoid investment and job creation and renders us uncompetitive against other countries. Adding a new EPA Clean Air Act greenhouse gas regulation will increase costs and cause further delays and bureaucracy. Commercial industrial opportunities when they arise must be seized or they disappear in favor of more nimble competition abroad.

As for cost competitiveness, an unlevel regulatory playing field against U.S.-based manufacturing production will favor production from offshore facilities. By example, our facilities in India and China are not burdened by greenhouse gas regulation. In addition, our Indian facility has benefited from emission credits for adding cogeneration to its process. One need only contrast that with the methods that are being proposed to be used to regulate greenhouse gas under the Clean Air Act for our U.S. facilities, which would represent a burden and restriction without incentive.

There is no question that Clean Air Act regulation of greenhouse gas emissions will deter production, investment, and job creation in the U.S. in favor of other countries.

I thank you.

[The prepared statement of Mr. Sweeney follows:]

Testimony of

Gerry Sweeney

President and Chief Executive Officer

Rain CII Carbon LLC

Before the

House Sub Committee on Energy and Power

June 19, 2012

"EPA Greenhouse Gas Regulation"

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Specific to GHG emissions, policies that provide incentives such as investment tax credits, grants or accelerated depreciation are more effective and create jobs and are a preference to more regulation.

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Our experience is that regulations - while well meaning can be conflicting in purpose, reduce competitiveness and result in less that optimal environmental benefit. We believe this will be the result when EPA promulgates regulation of GHGs under the Clean Air Act. A loss of jobs will result from both burdensome

cost and bureaucratic delay. EPA GHG regulations will impact the manufacturing sector in two ways: once from higher costs placed on our operations and secondly through higher electricity prices that get passed on to us.

For instance, we sit before you today waiting for a determination by EPA on the impact of the Acid Rain Program, CAIR and the Cross State Air Pollution Rule on an existing energy cogeneration project now under construction and upon which we have had discussions with EPA over the last five months. It is an example where the rules have become so complicated and the programs so overlapping, that significant delay is involved in attempting to interpret requirements even though EPA has competent and well meaning professionals examining the project. The delay exists even though the project is a "green" cogeneration facility that will result in significant reductions in GHG and criteria pollutants, increase jobs, competitiveness and generate tax revenue for the government.

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There is no question that Clean Air Act regulation of GHG emissions will deter production, investment and job creation in the US in favor of other countries.

Thank you.

Mr. WHITFIELD. Thank you, Mr. Sweeney. And I thank all of you for your testimony.

And at this time, I will recognize myself for 5 minutes of ques-

tions.

Dr. Cox, I was looking at your biography or background. You have multiple degrees from Harvard, Stanford, MIT. Do you have one from Duke as well or—

Mr. Cox. I have not yet had the privilege.

Mr. Whitfield. OK. But I understand you also have a Ph.D. in risk analysis. You are a member of the National Academies Board on Mathematical Sciences and Their Applications, and you are an honorary full professor of mathematics at the University of Colorado at Denver. Is that correct?

Mr. Cox. Yes, that is correct.

Mr. WHITFIELD. Now, in your professional opinion, and you have looked at this closely, are there public health risks from green-

house gas emissions?

Mr. Cox. No, there are not public health risks from inhalation of greenhouse gases. To the extent that greenhouse gases affect temperature, there may be effects on public health. For example, typically, elderly mortality rates decrease as temperature warms. Conversely, typically, elderly mortality rates increase if temperatures grow cooler.

So there could be a temperature-related impact on public health

but not, I think, a toxic impact on public health.

Mr. WHITFIELD. And are you aware of any rigorous risk assessment performed for health effects from greenhouse gases?

Mr. Cox. No. I am aware of many computer simulation studies

but no rigorous causal analyses.

Mr. WHITFIELD. Now, EPA and others, whenever they talk about this regulation and many others, they emphasize the health benefits. And are there any scientifically provable health benefits of the greenhouse gas regulations?

Mr. Cox. To my knowledge, there is no approved human health

benefit from such regulation.

Mr. WHITFIELD. OK. Thank you.

Now, Mr. Smith, you are president and CEO of CountryMark, and to my understanding, that is a small refinery, is that correct?

Mr. Smith. Yes, sir, it is.

Mr. WHITFIELD. And you are a cooperative? You are a not-for-profit company, is that correct?

Mr. Smith. That is correct.

Mr. Whitfield. And you basically provide most of your product to the farming community, is that correct?

Mr. SMITH. That is correct.

Mr. Whitfield. Now, it is my understanding that you have spent or will spend nearly \$100 million over a 10-year period to comply with EPA's low sulfur fuel requirements just to stay in business and yet these changes have increased greenhouse gas emissions. Is that correct and would—

Mr. SMITH. That is correct.

Mr. Whitfield [continuing]. You elaborate on that? So you spent \$100 million to comply and you are increasing greenhouse gas emissions?

Mr. Smith. That is correct. And the increase comes from two main areas. The first is we used to burn hydrogen in our process heaters, which would result in virtually no greenhouse gas emissions. We have had to take that hydrogen and use it to desulfurize the fuels, which then replaces it with natural gas, which increases CO2 emissions. And, in addition to that, there is a variety of other process changes that also increase the emissions themselves. It is the way you have to desulfurize fuel.

Mr. WHITFIELD. Right. OK. Thank you.

And Mr. Shaffer, we have been talking about this Tailoring Rule, and EPA admits in the Tailoring Rule that the Agency underestimates the full impact the Clean Air Act greenhouse gas regulations would have on farmers. Without the Tailoring Rule—and there are many people who do not believe that it is legal because the statute clearly says 250 tons per year instead of 100,000—but in the absence of the Tailoring Rule, such regulations could affect everything—and I want you to tell me if this is correct—everything from manure management, to space-heating, to operating pumps for drying and curing, and more. And it seems to me that these regulations clearly penetrate deep into many phases of the farming process. Would you agree with that statement?

Mr. Shaffer. Very much so. They would have a dramatic economic burden on the average-sized or small farms too, all-sized

farms.

Mr. WHITFIELD. And if this happens, this would be unprecedented for the farming and agricultural community, wouldn't it?

Mr. Shaffer. We have never experienced something like this, and to be frank, I honestly don't know how we would be able to deal with the cost. We are price-takers naturally, not price-makers.

Mr. Whitfield. OK.

Mr. Shaffer. So we would have to try to absorb that and there is just no way they could do it. Our analysis team in Pennsylvania did a study last year. There was approximately a \$1.09, I believe it was, profit per hundredweight in the dairy industry. This cost would put that in the red just on the cost of the permitting require-

Mr. WHITFIELD. OK. My time has expired.

At this time, I recognize the gentleman from Illinois, Mr. Rush, for 5 minutes for questions.

Mr. Rush. Thank you, Mr. Chairman. Dean Chameides—Mr. Chameides. Yes, sir.

Mr. Rush [continuing]. Would you care to take a moment—I see you have a number of titles. First of all, you got your Ph.D., you are the dean of the Nicholas School of Environment, and you vice chair the Committee on America's Climate Choices, National Research Council, and you are the vice chair of the National Academy of Sciences-

Mr. Chameides. I am a member of the National Academy of

Mr. Rush. Member of National Academy of Sciences. What is

your academic background?

Mr. Chameides. I got my undergraduate degree from SUNY-Binghamton and my graduate degrees, both master and Ph.D., at Yale University.

Mr. Rush. Yale. Now, Dr. Cox has basically told me and others that as regards to climate change, one, that it is a hoax; two, that it has absolutely no effect on public health. So he has told me and others who believe as I do that we have really come up with answers that don't have explanations, that don't explain their conclusions, that don't conclude. Now, I want you to just take some time and you have heard his testimony. What do you think about his testimony?

Mr. CHAMEIDES. Thank you. Well, I have a couple of observations to make. First of all, talking about air quality, for example, and its impact on mortality is a difficult thing to do in the sense that if you actually want to prove positively that something kills somebody, you have got to kill them, and that is not what we do. So you are left with a variety of different methodologies of trying to establish that cause-and-effect relationship. And in fact, as a community, we have done that in many, many, many ways in terms of

looking at clinical damage as well as statistical results.

I might point out just in terms of air quality, one study that I am familiar with, in 1996, we had the Olympics in Atlanta. We shut down much of the transportation system. We had a major, major improvement in air quality during that period of time and we saw a significant decrease in a number of asthma visitations to hospitals. That is an indication of a cause-and-effect relationship. It is not as obvious as actually putting someone in a laboratory and giving them air pollution and seeing what happens, but it is pretty good.

With regard to climate change, I could say lots of things, but let me just say that I think we can all agree that heat waves kill. In 2003, Europe had a record heat wave, and without getting into a discussion about the role of global warming in causing that heat wave, for about a week or two, temperatures were more or less about 10 degrees above normal. Somewhere between 20 and 35,000 people died in Europe during that heat wave. That is the kind of risks that we face with global warming. And I would say it is a

pretty substantial public health risk.

Mr. Rush. Dr. Cox also said that changes in climate are only based on computer simulations and not real-world events. He asserted there is no evidence that air pollution leads to adverse health impacts. As a trained atmospheric scientist, how do you respond to those of us who are policymakers who say that this whole idea of man contributing to climate changes is again some kind of hoax that has been perpetrated on the American people? Are there any dangers in policymakers telling the American people that climate change is a hoax and therefore it is not necessary to implement policies to address this issue?

Mr. Chameides. Well, Congressman, I don't quite know how to respond to a statement that climate change is a hoax, because I mean it is just simply not true in my experience, certainly not in

my personal experience.

There are two aspects to understanding, for example, what the health effects of climate change might be. One is to look retrospectively and see what are the kinds of changes that we might expect to see in climate change and how they affected public health in the past. So, for example, we know that if you have major floods due

to severe storms, you have major health effects because you have water quality problems that can lead to morbidity and mortality.

If we now want to predict how that might happen in the future, of course, we have to use models because we are talking about the future. But we are very certain that these are the kinds of things that will happen. We don't know exactly when or how much and the specific time but we know they will happen. And they will definitely have public health effects because we know they have had in the past. If there is a major flood in North Carolina due to a hurricane, we know there are going to be water quality effects that are going to lead to sickness and death in North Carolina.

Mr. Rush. Thank you, Mr. Chairman.

Mr. WHITFIELD. The gentleman's time has expired. At this time I recognize the gentleman from Texas, Mr. Barton, for 5 minutes of questions.

Mr. BARTON. Thank you, Mr. Chairman.

Let me start off with a general statement. I was here in the Congress on this committee when we passed the Clean Air Act amendments in the early 1990s. It was not intended to apply to greenhouse gas emissions. CO2 was not listed as one of the criteria pollutants, and I don't recollect that there was much of a debate about it. There was some debate, but not much of a debate.

So Dr. Weiss is correct in his statement that we did have Massachusetts v. EPA, a five-to-four Supreme Court ruling that since the Clean Air Act amendments did not specifically state that it wasn't a criteria pollutant, maybe it could be. And he was also correct in his statement that the Bush administrator at the EPA said that based on that Supreme Court ruling that the EPA should conduct a study to determine whether it should be regulated.

It gets pretty fuzzy after that because the Obamas came into office and they had their mind made up, and in my opinion, their endangerment finding was a preconceived conclusion. And I say that because we have emails at the time that basically state that.

Having said that, we are now in the position where the Obama administration is—because they couldn't do it through a legislative act of this committee or the Congress trying to implement by the Executive Branch—greenhouse gas regulations and you are seeing what I consider to be the absurdity of the application.

When we put into law back in the early 90s some of these levels for major source polluters, those were quantities that were designed for those specific pollutants. Greenhouse gases are ubiquitous. They are everywhere. We create it. I am creating it right now. So to try to say that CO2 has to be regulated the same as SO2 or NOx is just simply intellectually, in my opinion, a non-starter. But having said that, once you start down the path, it can bite you pretty quickly, can get expensive pretty quickly.

Now, the gentleman that is representing the American Farm Bureau in his testimony talks about the cost per cow, \$182 per cow if you have to get a Title V permit for a major point source polluter, \$91 per beef cow, \$22.75 per hog. Farms are going to go out of business. They are just not going to do it. So I believe that in the next Congress, if not in this Congress, we ought to have a real debate on this committee about greenhouse gases as applied to the Clean Air Act. I would prefer that we explicitly exempt them by statute.

That would be my preferred solution. But if we don't have the votes to do that, we should at least give some guidance in statute to

what the standard should be based on greenhouse gases.

Now, I want to go to Dr. Cox. You were very careful in your answer to Mr. Whitfield's question. If I understood you correctly, you say that for older people an increase in average temperature generally is a good thing and a decrease in average temperature generally is a bad thing. Is that correct?

Mr. Cox. Yes, that is correct. The ill healths in winter more than offset the summer heat wave effect. Of the two, cold weather

deaths are by far the more important.

Mr. BARTON. So, on average, these small increases in average global temperature, which is called the greenhouse gas effect or climate change, from a health standpoint on average would be good not bad. Is that not correct?

Mr. Cox. I believe that is indeed correct, that on average, an increase in temperature will reduce elderly mortality rate.

Mr. BARTON. But as the gentleman next to you has pointed out, heat waves do kill.

Mr. Cox. Heat waves do kill. Cold winter days kill more.

Mr. Barton. So wouldn't we be better off instead of spending trillions of dollars to try to regulate CO2 to have a specific give every senior citizen an air conditioner for the summer, and give them a space heater in the winter. Wouldn't that be much more cost-effective?

Mr. Cox. I believe it could have a significant public health impact.

Mr. Barton. Thank you.

Mr. Whitfield. The gentleman's time has expired.

At this time, I recognize the ranking member, gentleman from California, Mr. Waxman, for 5 minutes.

Mr. WAXMAN. Thank you, Mr. Chairman.

The Supreme Court is going to make a decision fairly soon and they are going to disappoint a lot of people, whatever they do. The Supreme Court made a decision in the Massachusetts case. And they said EPA must regulate a pollutant that causes harm to health and the environment. I believe those are the precise words but something along those lines. And the EPA administrator under President George W. Bush made that finding. Now, members of the committee may not like the Supreme Court decision, but it is the law of the land just like the opening up to corporations to buy all the elections. That is the law of the land; the Supreme Court decided it, five to four.

Carbon is not a criteria pollutant, but the Clean Air Act provides for EPA regulation over a lot of pollutants other than criteria pollutants.

Over the past 9 months, Mr. Rush and I have written, in fact, 12 times to Chairman Upton and Whitfield requesting a hearing on climate change, and we have focused on major developments in climate change science and on events that demonstrate the perils of inaction. These repeated requests were met with silence.

Instead of holding hearings on the science and the risk posed by climate change, the majority opted to hold one hearing after another bashing EPA for every effort it makes to address the problem, no matter how reasonable or cost-effective. Republicans on the committee and in the whole House actually voted to reject the scientific consensus that climate change is occurring, caused largely by human activities, poses significant risk for public health and welfare.

Today, we have Dr. Chameides, a prominent climate scientist who can discuss the climate findings and recommendations of the National Academy of Sciences where he is a member. The National Academy is a preeminent scientific institution in our country. Do you disagree with that statement, Dr. Cox, the National Academy is a preeminent scientific institution in our country?

Mr. Cox. As a member of the National Academy of Engineering,

I would very much like to believe that is true.

Mr. WAXMAN. OK. Dr. Chameides, we wrote letters about the unprecedented heat wave in March and the January temperatures across the country that were 5.5 degrees above normal. We also asked for a hearing on the recent Intergovernmental Panel on Climate Change report that found it is very likely that the length, frequency, and intensity of heat waves will increase over most land areas because of climate change.

The IPCC also warned that the frequency of heavy precipitation will likely increase even as droughts intensify. How do the National Academy of Sciences findings compared to those of the IPCC? Should we expect more extreme weather events like the

ones we experienced this year?

Mr. Chameides. Yes. I think by way of background, Congressman, I think that of the effects of climate change that we foresee, changes in extreme weather and weather patterns is probably the one that is most immediate and probably on most of America's minds. And the data suggest that we are seeing changes in weather patterns and increases in extreme weather events. Our understanding of how the climate works indicates that that is in fact what we would expect. Establishing that cause-and-effect relationship is very, very difficult. It is almost impossible to attribute a given cause to a given weather event.

Mr. Waxman. The IEA concluded that we have about 5 years to shift from traditional fossil fuel investments to clean, low-carbon energy to avoid a dangerous climate change. They also found that delaying action is a false economy. For every dollar of investment avoided in the power sector in this decade, over \$4 will be needed to be spent after 2020 to compensate for the increased emissions with more expensive aggressive technologies and policies. What does the National Academy conclude about the cost of delaying action on climate change? Do they agree—

Mr. Chameides. We generally concluded that the longer we wait, the more expensive it will be to reach a certain goal in terms of carbon dioxide concentrations for a variety of reasons, including the fact that there are sunk investments, that if we make investments in certain kinds of power plants, in energy systems today, those investments will be sunk and it will be very difficult to back out from them.

Mr. WAXMAN. We requested hearings on the impact of global warming on crop yields and the threat of the melting permafrost.

Are there National Academy findings or new research on these issues that we should be aware of?

Mr. Chameides. Certainly, melting permafrost is an issue that continues to concern us, and the evidence suggests that there is continuing melting of the permafrost. What we are most concerned there is the emissions of the methane trapped in that permafrost, which could exacerbate the global warming.

Mr. WAXMAN. We rarely hear from scientists about the threat of climate change and what could be done to address it. If members

take one point away from this hearing, what should it be?

Mr. CHAMEIDES. The point is that with every time a CO2 that we emit to the atmosphere, we are increasing the risk that we face and future generations face. And a prudent course of action, a wise cause of action is to begin to address that problem to reduce the risks that we all face.

Mr. WAXMAN. What risks?

Mr. Chameides. The risks of climate change, which is risk to public health, risks of severe weather, risks of having clean water and adequate water for people. There are risks in terms of geopolitical risks in terms of international stability. We sometimes think that if something happens somewhere overseas, perhaps in Bangladesh, it is not relevant to us. I think it is very relevant to us in a global society. It injures every part of our society.

Mr. WHITFIELD. The gentleman's time has expired.

Mr. WAXMAN. Thank you very much.

Mr. WHITFIELD. At this time, I would like to recognize Mr. Terry for 5 minutes of questions.

Mr. TERRY. Thank you, Mr. Chairman.

My opening statement I guess would be I think it is hard to take anecdotal evidence of weather and translated into, you know, a pattern of increased catastrophes.

In the State of Nebraska, we are in tornado alley and yet we had a record number of fewer tornados this year or hardly had any. We barely had severe thunderstorms this year. So if you are in Nebraska to sit there and say there is an increase in tornados, we are

not going to buy into that.

Secondly, yes, we have had a warmer spring than usual, and it is interesting. I think we have had a couple of highs that broke records on 2 days. And they broke records from the 1890s. So was there a manmade-caused heat wave in 1890? So, you know, I guess we can classify that kind of data as more of opinion to fit in to a philosophy. I am more concerned about getting actual facts that we can rely on.

But even though I represent Omaha, Nebraska, which is more cement than dirt, I come from an ag State. So I would like to ask—is it Mr. Shaffer? I can't see from the gentleman from Virginia makes a better door than a window.

Thank you, Mr. Griffith.

But we have lots of row crops. Can you tell me very quickly if you are going to have an average farm of 700 to 800 acres with the tilling, the planting, and the harvesting in 1 year what the potential greenhouse gas emissions would be?

Mr. Shaffer. Would you repeat that? What the potential—

Mr. TERRY. Take an average farm in Indiana or Nebraska or Pennsylvania, I guess. In Nebraska, it is around 700 to 800 acres. Say you are planting all corn; what is going to be the yearly emissions? Is it going to be under or over 100 or 250 tons per year of greenhouse gas?

Mr. Shaffer. It is going to be over.

Mr. TERRY. OK. And that would trigger PSD or Title V?

Mr. Shaffer. Permitting, operating, and if it is over the 250 they are talking about would trigger construction permits, and that becomes critical at a time when we are urging young people to enter into farming and coming back on the farm. So when you have a father that wants to allow for a son or daughter to enter the operation, most of the time, you have—

Mr. TERRY. I am going to interrupt there because I need to get

to the next part which is ranching.

Mr. Shaffer. OK.

Mr. Terry. Let's just say cattle or in Nebraska we have some dairy and lots of hog operations. You went through in your testimony how specifically the cost per cow, the cost per pig. In your calculations, did you calculate the methane at 25 times, 26 times, or 72 times? Because all three of them have been thrown out in discussion of equating it to greenhouse gas. Or was it a one-to-one?

Mr. Shaffer. It was four times the cow equivalent, for instance,

on dairy.

Mr. Terry. OK.

Mr. Shaffer. That brings you up to the tons of pollutants that would be considered.

Mr. Terry. And in Nebraska, most of our feed lots have significantly more than 25; they will have hundreds. What can you do to construct, to eliminate, or get the tons below 250 tons per year in a feed lot?

Mr. Shaffer. The only thing you can do is reduce the number of animals.

Mr. TERRY. What is going to be the impact on food prices and farming operations if you have to just take a number of feeder cows down to less than, let's say, 10 or 15 cows?

Mr. Shaffer. The result is the American consumer is going to be living off imported food.

Mr. Terry. Thank you very much. I have more but I will wait.

Mr. WHITFIELD. Thank you very much.

At this time, the chair recognizes the gentleman from Texas, Mr. Green, for 5 minutes.

Mr. Green. Thank you, Mr. Chairman.

Before my colleague from Nebraska leaves, I noticed yesterday it was actually about 7 degrees hotter in Omaha, Nebraska, than it was in Houston, Texas, which is amazing. But I was a business major with the law school so we don't deal in absolutes. But I also understand that we have an issue that our experts and our scientists say we need to deal with, and I think our issue ought to be how can Congress do it?

I know last Congress we passed a cap-and-trade bill that couldn't get hardly a majority vote from the Senate, so that is not the solution. But we need to look for solutions at how we can deal with carbon release over a period of years. And hopefully, we will get to

that point.

Mr. Chameides, you served as vice chair of the National Research Council panel that produced the America's Climate Choices, the report requested by Congress to investigate how the United States should respond to the challenge of climate change. Your report examined the causes and consequences of climate change and made recommendations on how to address that. And I would always say that we should be working on the solutions like I said earlier, and I think Congress should be the lead on developing our policy instead of the EPA.

Can you explain what role the National Research Council rec-

ommended for Congress in addressing climate change?

Mr. Chameides. Certainly, Congressman.

In looking at the issues with regard to limiting emissions, it was our judgment that probably, something that had a market-based approach would probably be most effective, most efficient economically. However, if a market-based approach was not in the offing, we felt that there are other mechanisms that would make sense, including perhaps using the Clean Air Act to begin to limit emissions. We also saw a significant role for Congress in trying to organize adaptation processes.

I might point out that in thinking about responding to climate change, we are talking about a process that is going to probably take us many, many decades. And we are thinking about the first baby steps that we take, and I think that Congress can play a significant role. And our committee felt that Congress could play a role, specifically, in trying to figure out how to level the playing field in the marketplace so that the true impacts of carbon emis-

sions would be reflected in its price.

Mr. GREEN. OK. I know that for a successful policy we need to develop, we have to promote economic growth. And again, we are in a political system here, so it has to be something we have a lot of buy-in from, not only from rural areas, but urban areas and Republicans, Democrats, and everyone. But some people say that any policy change to address climate change is only going to do harm in our economy. Can you respond to that? Your report looked at these issues and global competitiveness.

Mr. Chameides. Sir, I can address it to some extent. I am not an economist so I need to be careful. We felt, and I think a lot of economists feel, that there are great opportunities for American competitiveness in the green technology area, that these in fact will be the technologies of the 21st century, and that in developing a significant Federal policy around climate we could also, at the same time, increase our competitiveness on those technologies for

example.

Mr. GREEN. Well, and I share the concern, for example, from the Pennsylvania Farm Bureau that if the United States makes these decisions and price our production capability, whether it is refineries in my that area or chemical plants or ag products, all we do is transfer that to other countries to provide that. And that is my concern that we can do some things with the political will be have now maybe, but if we are really going to solve this problem, we have to have international buy-in, particularly from the emerging

countries like China and India, who actually have economic growth that is more important than air quality issues. But we also don't want to transfer all our capability for production, again, whether it is ag or whether it is manufacturing to those countries because,

you know, then we won't have the economics.

But I also know in your statement you said that it is possibly by the turn of the century, Texas could be looking at 120 days a year of temperature exceeding 100 degrees. We made a pretty good down payment on it last year, and it is almost like we are paranoid now because we go a week or 10 days without rain we start worrying about whether we are going to have another drought like we did last year. So although, in all honesty, we have had floods in North Carolina throughout recorded history; we have had droughts throughout history in Texas. But I think Congress ought to do some things to get us on that road. And I think that is where we ought to go from this hearing.

And thank you, Mr. Chairman.

Mr. WHITFIELD. Thank you. At this time, the chair recognizes the gentleman from West Virginia, Mr. McKinley, for 5 minutes of questions.

Mr. McKinley. Thank you, Mr. Chairman.

I guess let me get you, Mr. Weiss, out of the way first. Your comments earlier were disturbing when you say there is no war on coal. You know better than that. You know, when the President comes out and says, I am going to bankrupt any new coal-fired powerhouse, when Steven Chu says that coal is his worst nightmare, when the Vice President says that they are not going to support clean coal technology, there will not be clean coal, when the President slashes the funding for National Energy Technology Lab for its work in clean coal technology by 41 percent, I am astounded that you can sit there and say there is no war on coal. When I have a list of 20-some companies, 20-some powerhouses in just my immediate area that have been shut down because of this war on coal, when the thousands of people that have lost their jobs at work there know full well that it is because of EPA's aggressiveness, I am astounded.

People in Miami Fort, Beckford, Pickaway, Bay Shore, Lakeshore, Avon Lake, Ashtabula, East Lake, Niles, Conesville, Muskingum River, Armstrong, New Castle, Shawsville, Titus, Portland, El Remora, Albright, Hammer, Reidsville, Willow Island, Kanawha, Phillips Ford. I would just suggest, Mr. Weiss, you go to those neighborhoods and you tell them this is not a war on coal when they are sitting at home without a job.

Mr. Cox, if I could go to you a little bit on the thing.

Mr. Cox. Please.

Mr. McKinley. Your comments have been interesting about health, air quality. I am just curious, given that the World Health Organization's own statistics have indicated that indoor air quality is twice as hazardous, twice the people have died—actually, excuse me, let me correct that. Twice the number of people have died due to indoor air quality than outdoor air quality. Are you aware of that?

Mr. Cox. I don't think that I was, no.

Mr. McKinley. I am sorry?

Mr. Cox. No.

Mr. McKinley. OK. Also, that the EPA came out in their own Web site saying that indoor air quality is 96 times worse than outdoor air quality. I am trying to understand as an engineer—someone needs to teach me—then, why are we so focused on shutting down our plants and our facilities and putting people out of work when the real threat to our health and safety is on the indoor air quality?

Mr. Cox. Yes, I think that there is a natural human tendency, as Dr. Chameides illustrated with the Atlanta example, to say, well, sometimes things go up, sometimes they go down. If only we could control the decrease in mortalities, it would be great for constituency; it would be great for public health. And what they forget is to look quantitatively at questions like, was there a reduction in mortality rate in Atlanta, for example, that was any greater from the reductions elsewhere that wouldn't have occurred anyway?

The comparison between indoor and outdoor air pollution is similarly a matter of numbers, not a matter of direction or of hope. So when I referred to wishful thinking and bad statistics as the basis for conclusions such as the false conclusion I have drawn from the Atlanta study, the conclusion that the Health Effects Institute has recently rejected, and for example, I think that a lot of this turns on our intuitive feeling that qualitative direction matters and are

forgetting to look at the numbers and quantities.

Mr. McKinley. If I could, Dr. Cox, do you think we should be spending more time perhaps looking at our indoor air quality? Because I am hearing a lot of testimony here over the last 18 months about all these premature deaths and the like caused by outdoor and these greenhouse gas emissions, but yet if the indoor air quality is 96 times worse, how do we differentiate that a person got an asthma attack because of greenhouse gas emissions as compared to their indoor situation—

Mr. Cox. Yes.

Mr. McKinley [continuing]. Whether someone in their house

was smoking a cigarette? How do you differentiate that?

Mr. Cox. That is an excellent question. For the purposes of our tight time constraint here, let me just say that there are excellent and readily available quantitative methods for causal analysis that allow one to compare indoor and outdoor pollution effects, for example. It is not true that this is a very difficult matter and causation is ambiguous. All we need to do is to look at the issues that you are raising or the issues that Dr. Chameides raised using readily available quantitative methods. These methods are documented in my written testimony.

Mr. McKinley. Thank you. I yield back my time.

Mr. WHITFIELD. Thank you, Mr. McKinley.

At this time, the chair recognizes the gentleman from Virginia, Mr. Griffith, for 5 minutes.

Mr. GRIFFITH. Thank you, Mr. Chairman.

Let me make it clear that indoor air is not just somebody smoking cigarette because everybody wants to vilify cigarettes, but oftentimes the problems from indoor air come from cats, dogs, human existence, dust, and trapped pollens, tree pollens, et cetera. And that is one of the things that we have to deal with and why, some-

times, it is better to open your windows up and let a little fresh air in. And so I do appreciate my colleague from West Virginia pointing out both the war on coal and indoor air, but I don't want folks out there who might be watching this on C-SPAN to think it is only the cigarette smoke that is causing the problem. It is things that every household has, depending on the individual and their particular makeup that maybe influenced or affected by that.

That being said, I have to also associate myself with the comments of Mr. Green. I think that one of the problems that we have, Dr. Chameides, is—and I apologize if I have mispronounced that, I am trying to get it right. Thank you.

One of the problems that I have is, is that if we take fixes to global warming that are extremely expensive and chase our industries out of this country—they are going to places like Bangladesh, China, India where they are not paying attention. And you would have to agree with me that we don't breathe air that is only circulating around the United States of America. We breathe air particularly in the Northern Hemisphere but throughout that comes from places in the globe. And so without international cooperation where they are doing the same kinds of things that we are doing, the problems that you see are going to continue to expand no matter what we do, is that not true?

Mr. CHAMEIDES. Congressman Griffith-

Mr. Griffith. Yes.

Mr. Chameides. Yes, Griffith, right? I got you right.

Mr. Griffith. You got me right.

Mr. CHAMEIDES. OK. Thank you. You got my name wrong, I got

Clearly, this is an international problem. And if the United States acts alone, it will be futile. We must get the world to act in unison. Traditionally, I think of America as being a world leader and I think we need to do leadership. I think there are certain things that we can do within our borders. There are certain that we can do to protect our economy at the borders in terms of have goods flow inside and outside our borders to and from foreign countries. But ultimately, we need to lead the world-

Mr. Griffith. OK.

Mr. Chameides [continuing]. In terms of this global problem.

Mr. Griffith. But if we put such huge pressures on American industries that they take their jobs to these other parts of the world, wouldn't you agree with me that intuitively, we are actually making the problem worse and that what we ought to be looking for are the low-cost fixes and not the high-cost fixes, and that the EPA is looking at all kinds of fixes, but tremendous numbers of their fixes, the regulations they have come out with in the last few years have been very costly, and that if we continue down this path with these costly regulations, we are going to kill American jobs to no gain? We may have the right to put on the mantle of some form of moral leadership but we will have lost jobs. Would you not agree with that?

Mr. Chameides. Well, I am not in the position to—

Mr. Griffith. I hate to do yes or no to you.

Mr. Chameides. That is fine. But I am not-

Mr. Griffith. I don't have time-

Mr. Chameides. I will say a really quick yes or no. I am not in a position to talk to you about the cost of these regulations. I suspect that there are things that we can do to begin to get us down the road towards lowering our greenhouse gas emissions and prove ourselves competitively in the global market.

Mr. Griffith. When you indicated

Mr. Chameides. Those are the things that we should be looking at.

Mr. Griffith. You indicated in one of your articles somewhere that if we had a meatless day, we could actually help climate-

Mr. Chameides. Yes.

Mr. Griffith [continuing]. Control because we wouldn't have as many cows and all the production cost.

Mr. Chameides. Yes.

Mr. Griffith. Dr. Cox, in regard to the expense in global warming, when I asked Lisa Jackson last year about their determination that global warming was harmful, I asked her if they studied what happens when people who are poor cannot afford to heat their homes properly and doesn't that have a health cost? She indicated there were programs for that. My people in my district tell me otherwise, that the programs run out of money long before winter ends. Would you agree that people who are living in areas where it does get cold and who do not have adequate heat are more likely to be negatively impacted in their health than the temperature warming?

Mr. Cox. Yes, I would.

Mr. Griffith. And would you also agree with me that when the President said, "because I am capping greenhouse gases, coal power plants, you know, natural gas, you name it, whatever the plants were, whatever the industry was, they would have to retrofit their operations. That will cost money. They"—talking about the power plants—"will pass that money on to consumers if that is far higher." That cost is going to be a far bigger burden on the working poor, the elderly, and just the poor generally, the unemployed, that it is going to be a higher cost on them. And they are more likely to be unable to afford to heat their homes in the winter time and thus have higher health impacts?

Mr. Cox. That seems very plausible to me, yes. Mr. Griffith. Thank you, gentlemen. I appreciate it and I yield back my 4 seconds.

Mr. WHITFIELD. Thank you, Mr. Griffith.

At this time I recognize the gentleman from Kansas, Mr. Pompeo, for 5 minutes.

Mr. Pompeo. Thank you, Mr. Chairman.

I want to direct my questions to Mr. Shaffer here to start with. First of all, I have to say it is interesting to me as a regulatory matter that we have got this thing, this CO2, these greenhouse gases that aren't mentioned in the Clean Air Act. And then when it gets bootstrapped into this to begin to regulate it, they find that the capacity to regulate under the existing statute is insanity on its face, and thus they create the Tailoring Rule to dig themselves out of the hole that they created for themselves, how, when they first tried to regulate greenhouse gas under statute head, they had no objective to do that.

We heard Mr. Barton talk about the fact that he was here. I was not. But I have read the statute. It is pretty clear to me that there was no one here thinking or contemplating whether this was the

appropriate tool to regulate these very greenhouse gases.

Mr. Shaffer, EPA's estimate says that 37,350 or so farm generators would be regulated if they got rid of the Tailoring Rule, if the Tailoring Rule was kicked out. Tell me what that would mean. The day the court kicks the Tailoring Rule out, tell me what these farmers, these 37,350 generating facilities would be subject to, and what their economic response would be.

Mr. Shaffer. Well, at that point, we are looking about permitting costs nationwide, about \$860-some million, and you know, the way it is set up, the cost of the permit is based on animal numbers up to a maximum permit cost of \$180,000-some is the maximum it can be. So if you look at small farms in Pennsylvania, the cost per cow is about \$180. If you look at some large dairy farms in California where 40,000 head might be on a farm, there the cost per cow comes down because you have triggered the maximum, the cap. So now you have created an unfair competition even within our own country between farmers in one area and another depending on the size.

So they just cannot afford to come up with the permitting. And then it is not only the cost of the permit, we have to maintain it and you have to wait for somebody to give you permission to operate, you have to wait for somebody to give you permission to con-

struct things, so-

Mr. Pompeo. How many years do you think it would take before EPA could get all these permits granted withoutcoming back to us and asking for a whole lot more bureaucrats to sit in that big old building across the street?

Mr. Shaffer. The worst part is the permit is only good for 5 years so you have to start the whole process over again in 5 years. Every 5 years you have to go through this process. I can't see how they will ever get through it and do it. And the sad part of it is there is no environmental benefit to getting the permit. That is the really sad part of it.

Mr. Pompeo. Mr. MacKie, tell me what you think. The Tailoring

Rule goes away; tell me how many bakers go away.

Mr. Mackie. Well, I think there was some comment earlier about being able to offshore, and in the baking industry with a 4day shelf life, that really is not an option, not that our folks would take it if they could. But, you know, you are looking at about a \$500,000-per-bakery-line investment to go to the new Tailoring Rule threshold. That is \$2.19 per loaf of bread. That is an awful lot of loaves of bread that you have to sell to break even. So the hole gets deeper for the industry. So the cost is a significant issue on top of what is already in place through the original Clean Air Act amendments.

Mr. Pompeo. Great. Thank you. With that, Mr. Chairman, I yield

Mr. WHITFIELD. Thank you.

At this time I recognize the gentleman from Oregon, Mr. Walden, for 5 minutes.

Mr. WALDEN. Right. I thank you and I appreciate the testimony by all the panelists. I served for 2 years on the Select Committee on Global Climate Change that Mr. Markey chaired and learned a

lot along that period of time.

Mr. Shaffer, I want to go back to you. My dear friend and colleague from Nebraska was asking about the effect on farmers. And I want to follow up because I represent a district that is 70,000 square miles of eastern Oregon, larger than any State this side of the Mississippi, very, very agrarian, lots of small farmers.

And as I listen to Mr. Terry's very good questions and your answers, it strikes me what we are going to have here is a government-forced consolidation of small farmers into bigger farmers. Am

I hearing that right?

Mr. Shaffer. I believe that will put a tremendous amount of pressure on the smaller operations. As I said before-

Mr. Walden. Yes.

Mr. Shaffer [continuing]. The price per cow when it is based on animal numbers and stuff, that only the larger farmers would be in a better position to handle this kind of regulation, definitely, more than the smaller numbers. Once that cap is met, then the

price per animal comes down.

Mr. WALDEN. And I guess that is the trouble. I was a small business owner with my wife for 22 years. I grew up on a cherry orchard, and I am telling you, as I get around my part of Oregon at least, we care a lot about the environment. We want to do the right thing, but we also need an economy that works. I was looking at the new unemployment numbers in my district and they are 11, 10, 12, 13, I mean, and I meet with these wheat growers, and cattlemen, and cattlewomen, and others and they are struggling just now to comply with all the rules or regulations of Federal Government.

Now, some of my dear friends on the other side of the aisle, I have heard them proclaim that the new regulations being proposed by EPA are actually an economic growth model for the country, that this will create jobs. And having been a small business owner, I am trying to figure out how that works. You got to pay somebody to process the permit and do all that but that never seemed to me

to be a very good way to create economy.

What are these permit cost going to be, do you think?

Mr. Shaffer. The permit cost would have a devastating effect on the economic-

Mr. Walden. Yes.

Mr. Shaffer [continuing]. Viability of these small farms. And what a lot of people don't realize too, just by nature, farmers invest back into their local communities.

Mr. Walden. Right.

Mr. Shaffer. That is where most of their money is spent. And so the rippling effect you would have with feed dealers and with machinery dealers, things like that, it would just ripple down and have a great effect on the economy.

Mr. WALDEN. And don't you just eventually end up into just big, giant multinational farms, in effect, to be able to comply with all this? I mean, I don't know how an individual cattle rancher is going to handle all this. And this isn't the only thing they are being asked to deal with, by the way. It just is phenomenal to me the kinds of cost and permits.

I was meeting with a farm co-op manager who is building a new building, and he was telling me, my hometown, little town of 6,800 people, and Pat was telling me, he said, you know, I am doing my own stormwater runoff as part of this building. I am going to contain it right here, manage it right here. And the city is really upset about that because if they could get him into the city sewer system, they could get a \$30,000 permit fee. And they are just not happy that he has figured out a way to do this within the code on his own property. I mean that is what he was telling me. And he has detailed one thing after another with these government permits and fees, and on a \$3 million building, he has got a \$150,000 right upfront just in permit fees.

I mean I don't think some of these people understand what is happening out there on ground, why this economy is so stalled, why small employers are going I don't know that I want to grow my business or could afford to, and what is the next set of rules and regulations coming down, whether it is to, you know, sort of take over healthcare and what that may portend in terms of re-

quirements?

Mr. Sweeney, I want to go to you because I understand you do agriculture and do farm and overseas as well, right?

Mr. SWEENEY. Not agriculture, sir. We are industrial. We are a manufacturer of carbon.

Mr. WALDEN. I am sorry. That is right because it is Mr. Shaffer, not Mr. Sweeney. Let me ask you this in terms of the manufacturing. When you compete internationally, do you go up against companies that operate in countries that don't have these kinds of proposed requirements?

Mr. Sweeney. While we have the overwhelming majority of the 2.4 million tons of capacity that we have, seven plants are here. We have one in India and one in China. So we actually look at those economics internally in the company and the difference in regulations as far as—

Mr. WALDEN. And what is the difference?

Mr. Sweeney. It is a phenomenal difference.

Mr. WALDEN. Which way?

Mr. Sweeney. That——

Mr. WALDEN. A lot easier in China and India?

Mr. Sweeney. Yes, yes. I will be careful in the way of saying easier in the sense. There is certainly less regulation. There is much more permitting but my experience has been that the cost of that permitting and overall the limitations that it puts on the business as far as additional cost earned on the business is much less in those countries.

Mr. Walden. OK.

Mr. SWEENEY. It may be the same bureaucracy in the permitting process.

Mr. WALDEN. Yes. And I am not saying we should go emulate India and China in their environmental policy at all. But somewhere in here we are competing internationally and have to be cognizant.

I am sorry. I have overrun my time, Mr. Chairman. Thank you for your—

Mr. WHITFIELD. Thank you, Mr. Walden.

At this time, I recognize the gentleman from Texas, Mr. Olson. Well, wait a minute, Mr. Sarbanes. I recognize the gentleman from Maryland, Mr. Sarbanes, for 5 minutes.

Mr. SARBANES. I appreciate it, Mr. Chairman. I am a little winded. I have been running from my office. That is what you do in this business.

Anyway, I wanted to ask you, Dr. Chameides. You spoke to two responses to climate change. One is mitigation, one is adaptation, and both have to be undertaken, obviously, if we are going to make progress on this problem. I am concerned about the potential for the Federal Government's role in the adaptation side of things to diminish. And of course, I applaud the EPA's efforts to tackle this issue. But, as you can see, there is a fair amount of resistance to it from some quarters here in Congress.

The reason I am particularly interested in the adaptation side of this is Maryland, where I hail from, has worked very, very hard over the last few years to really explore all dimensions of how you respond to adaptation, to climate change, and has really taken a lead in that regard. It stands to reason when you look at Maryland's geography. We have the Chesapeake Bay. We have a huge coastline. I mean this is the largest estuary body in the United States.

So we have this extensive shoreline and we have already had instances where there has been significant erosion. Some of the statistics are that in the last 100 years, Maryland has experienced a 1-foot-in-sea-level rise, which has led to the loss of 13 islands in the Chesapeake Bay. And the models that you mentioned earlier suggest that an additional 2-to-3-foot sea level rise could submerge thousands of acres of tidal wetlands, low lying lands, even Smith Island, which is a treasure of ours in the Chesapeake Bay.

And so there is obviously huge potential impact here. So what I would like you to address just in the 2–1/2 minutes or so that are left is, what are the consequences if the Federal Government doesn't step up and really engage in meaningful adaptation planning and do that in concert with the States?

Mr. Chameides. Thank you. It is an excellent question.

So first of all, with regard to adaptation, let's understand that climate change is already happening, and the full impacts of the CO2 that we emit into the atmosphere today won't manifest themselves fully for another 20 or 30 years. So we have to begin thinking about adaptation regardless of what we do about what we call mitigation, so it is really, really important. And I think that there is a huge role in adaptation for local governments, for State governments, for municipalities because ultimately, that is where the rubber hits the road.

The role for the Federal Government I think which will be very, very key is in coordination, information sharing, empowering communities to figure out what needs to happen. Sometimes, when we think about working on adaptation, it is like when you are going to take a pot of money and a group of people, and they are simply going to work on adapting to climate. I don't think that is the right

way to go about it. I think we need to understand that as we make plans on infrastructure or anything in this country over the next 30 or 40 years, a part of that plan needs to take into account climate change. It needs to be an integral part of our thinking about how we are going to build our future and our infrastructure, and I think that is the real key part.

Mr. SARBANES. It is analogous I guess to when you are building new structures on the West Coast and you have to anticipate po-

tential for earthquakes.

Mr. CHAMEIDES. Sure, it—

Mr. SARBANES. You start building into your codes and all the rest of it what it would take to withstand that, so you are saying adaptation ought to be looking ahead, using the models figuring out what the most likely scenarios are in terms of effects of climate

change and then trying to anticipate it.

Mr. Chameides. Building and resilience. I would use the analogy of building a home worrying about fire. I mean obviously, the plans around fire, the adaptations to fire include the building codes and include the sprinklers; it includes an emergency exit, you know, a situation ultimately perhaps even moving your home. I mean there is a wide variety of things that need to be integrated into how we think about the future and how we build our country in the future.

Mr. SARBANES. Thanks very much. I yield back.

Mr. WHITFIELD. At this time, the chair recognizes the gentleman

from Texas, Mr. Olson, for 5 minutes.

Mr. OLSON. I thank the chair. And good morning and welcome to the witnesses. Thank you for your time and your expertise, greatly appreciate it. And as you all can expect I am a Texan, a proud Texan from Houston, Texas, the energy capital of the world. And frankly, some folks back home don't understand how EPA

And frankly, some folks back home don't understand how EPA can push such an anti-fossil fuel, anti-job, American job agenda. You know, using the greenhouse gas endangerment findings, Tailoring Rules, and other greenhouse gas rules under the Clean Air Act, which was never intended. Congress never intended the Clean Air Act to be used to regulate greenhouse gases. But EPA is using this authority based upon a Supreme Court decision that never said EPA could regulate greenhouse gases. They had to regulate greenhouse gases. They had to regulate greenhouse gases. The people back home wonder why the EPA is not required to do a thorough cost-benefit analysis of increased regulation taking into account economics, economic impacts, jobs, weigh it against the health benefits. And CSAPR, the Cross-State Air Pollution Rule, is the best example of what my people back home are feeling.

EPA included Texas in the proposed rule 6 months before it was supposed to be implemented. It is normally at least a year and a half before a State is included in that thing so they have time to prepare for it and make some of their comments. But we got 6 months. So almost immediately that same week the largest producer of coal-powered electricity in Texas, Luminant, said they would shut down two power plants, shut them down, 400 American

jobs going away.

Texas is the fastest-growing State in the country and we picked up four new congressional districts. And we have got very little excess power. In fact, our ERCOT, the power regulator, said we need to have four to five more power plants built before the next 2 to 3 years to sustain electrical viability with the growing population.

And Dr. Chameides—I hope I pronounced that correctly—said, "heat waves kill." And if Texas has another heat wave like we did last year like my colleague, Congressman Green, mentioned, you know, over 120 days of 100-degree weather, I mean, if we shut down power plants like the CSAPR rule would have done, you know, people will die. Elderly people, young people will die unnecessarily.

And so I have introduced a simple bill that requires EPA to include economic impacts like job losses, job creation, power-generating capacity in any new greenhouse gas proposal regulation. And I ask all of you—I know you haven't seen this bill so it is a surprise to you. But do you agree with the folks I work for that having EPA do some sort of economic analysis when they propose these regulations is common sense? Do you support something like that?

And I will start out with you at the end there, Mr. MacKie.

Mr. Mackie. Thank you, Congressman. I think it should be just a natural order of doing business on any major regulation that there be cost-benefit analysis and there are tools in place. It is another excellent tool where the disproportion impact on—in my case—smaller bakers would be very helpful.

Mr. Olson. Mr. Shaffer?

Mr. Shaffer. I really think that it is vital to do that before promulgating any regulation. To have all the facts only makes sense before the discussion moves forward.

Mr. Olson. Common sense, yes, sir. And Mr. Smith?

Mr. SMITH. Yes, sir. I would think that would be highly appropriate.

Mr. Olson. Mr. Weiss?

Mr. Weiss. The best available control technology Standards for the new power plant rules and for permits already includes a consideration of economic cost and in fact the back standard for getting permits is basically energy efficiency, which will save companies money as they use less energy.

Mr. Olson. OK. Dr. Chameides?

Mr. CHAMEIDES. I don't have a comment.

Mr. OLSON. OK. Thank you, sir. Dr. Cox?

Mr. Cox. Yes. I agree that sound risk cost-benefit analysis can improve public decision-making.

Mr. OLSON. Thank you, sir. Mr. Sweeney?

Mr. SWEENEY. I would agree, sir. In any business it is required at the boardroom table as well as any management discussion. I think it is absolutely commensurate.

Mr. OLSON. Thank you. I got a little bit of time here. I want to talk to Mr. MacKie down there at the end. I mean talking with my colleague Joe Barton mentioned some of the crazy things that are happening in the agriculture industry with these greenhouse gas regulations. I want to talk simply about some of the things that

happen to bakers' business.

You testified that EPA and State agencies have forced bakeries to consider emissions-control equipment to regulate emissions from natural ethanol emissions from yeast and that the cost of the equivalent may be up to \$80,000 per ton. Can you elaborate on

that, please?

Mr. Mackie. That includes just in one facility in 1 year what the cost would be and just to try to capture. And the issue was that it may not even be technically feasible. Again, there is no central location like the stack out of the bakery oven where you can grab what you have to do with ethanol. To try to capture the ambient yeast emission of CO2 is technically very, very challenging, and so the environmental controls that have to be put in place are going to be enormously expensive. Again, because you can't go to a single source to capture it, you have got to capture along the entire production line where the dough is rising.

Mr. Olson. I am out of my time. Sounds like you would be losing

some jobs, some layoffs necessary.

Mr. WHITFIELD. Thank you very much, Mr. Olson. And I want to thank all of you, members of the panel. We genuinely appreciate your being here and giving us your views and advice and answering our questions. And with that, I will dismiss the first panel and we will call up the second panel.

Mr. MACKIE. Thank you.

Mr. WHITFIELD. Thank you again.

On the second panel, we have the Hon. David Wright, who is commissioner and vice chairman of the Public Service Commission of South Carolina, who is actually testifying on behalf of the National Association of Regulatory Utility Commissioners. We have Mr. David Doniger, who is the policy director for Climate and Clean Air Program at the Natural Resources Defense Council. We have Mr. Steven Winberg, who is vice president of Research and Development, CONSOL Energy. And we have Ms. Barbara Walz, who is senior vice president for External Relations and Environmental for Tri-State Generation and Transmission Association.

So welcome, all of you. We appreciate your patience this morning as we worked through the first panel. And I am going to call on each one of you. We will recognize each one of you for a period of

5 minutes to make an opening statement.

And at this time, Mr. Wright, we will begin with you. As I said, you are commissioner of Public Service Commission of South Carolina, vice chairman, and testifying on behalf of the National Association of Regulatory Utility Commissioners. So you are recognized for 5 minutes.

STATEMENTS OF DAVID A. WRIGHT, COMMISSIONER, VICE CHAIRMAN, SOUTH CAROLINA PUBLIC SERVICE COMMISSION, ON BEHALF OF THE NATIONAL ASSOCIATION OF REGULATORY UTILITY COMMISSIONERS; DAVID D. DONIGER, POLICY DIRECTOR AND SENIOR ATTORNEY, CLIMATE AND CLEAN AIR PROGRAM, NATURAL RESOURCES DEFENSE COUNCIL; STEVEN E. WINBERG, VICE PRESIDENT, RESEARCH AND DEVELOPMENT, CONSOL ENERGY, INC.; AND BARBARA WALZ, SENIOR VICE PRESIDENT FOR EXTERNAL RELATIONS AND ENVIRONMENTAL, TRI-STATE GENERATION AND TRANSMISSION ASSOCIATION, INC.

STATEMENT OF DAVID A. WRIGHT

Mr. WRIGHT. Thank you.

Good morning, Chairman Whitfield and Ranking Member Rush and members of the subcommittee. My name is David Wright. I am president of the National Association of Regulatory Utility Commissioners and I am vice chair of the South Carolina Public Service Commission.

NARUC understands the significant impact that EPA's proposed standards of performance for greenhouse gas emissions will have on the power sector and their consumers. Although we have not taken a position either in support of or opposition to the suite of EPA rulemakings, we believe the rules must recognize the need for flexibility and compliance requirements, encourage coordination among generation plants, and provide continued dialogue between Federal and State regulators.

The EPA greenhouse gas proposal raises concerns regarding resource diversity, consumer costs, and the uncertainty for existing resources. On resource diversity, NARUC has encouraged EPA to recognize the needs of States and regions to deploy diverse resources based on their own characteristics. While EPA says it does not preclude new coal-fired capacity, its emission standards are based on natural gas combined cycle plants rather than maintaining a separate standard for coal units.

NARUC members are concerned that this will result in an overreliance on natural gas. We are fuel neutral but we know how important resource diversity is to the power sector. Yes, thankfully, the current price of gas is low, but no one can predict the future, especially when that future is reliant on a historically volatile commodity. A few years ago if you remember, natural gas prices exceeded \$14 per MMBTUs. Just recently, prices sunk to around \$2.

Now, speaking for myself, David Wright, I am very concerned about the impact the whole suite of EPA regulations proposed, adopted, and under consideration will likely have on utility companies and their consumers. As a regulator, I am accountable to the ratepayers. When bills go up, I get call from irate consumers. While I am not here to criticize specific provisions within any of the rules, I am afraid we are setting our utility customers up for a perfect storm.

My written testimony highlights a few studies from EPA and others that attempt to quantify the cost impacts of these rules. EPA's own assessment of the Mercury and Air Toxic Standards Rule estimates cost of \$9.6 billion annually for compliance. Obvi-

ously, when you add the greenhouse gas and other rules, the cost will only increase. In fact, studies by the National Economic Research Associates put the cost of complying with four EPA rules—MATS, the Cross-Air State Pollution Rule, and rules covering coal combustion and cooling water intake—at approximately \$21 billion per year from 2012 to 2020. According to NERA, retail electricity prices in the U.S. would increase by about 6.5 percent over that period with certain regions feeling the sting much more than others.

These estimates do not include the greenhouse gas rule nor the billions of dollars needed for upgrading the entire utility infrastructure, which some believe will cost more than \$2 trillion over the

next 20 years, all coming from ratepayers.

Additionally, many predict these rules will negatively impact grid reliability. The North American Electric Reliability Corporation has termed EPA's rules as the number one risk to reliability over the next 1 to 5 years. I am personally worried that there has never been a formal true reliability assessment of EPA's regulations. The agency has measured resource adequacy to determine whether the total amount of retirements in a particular region will cause reserve margins to fall below acceptable levels. But true reliability impacts occur locally.

Some of the units that may be retired as a result of these rules are needed for local reliability purposes such as voltage support and black-start capacity. If these units are not available, the potential formula like and black-start capacity.

tial for reliability problems could ensue.

If there is one message I would like for you to remember today it is that there must be a better way to do this. I understand the need to continue improving the environmental performance of the utility industry, but we must do it in a way that recognizes the absolute necessity of maintaining reliability and stable rates.

Within NARUC, we have a formal dialogue with the Federal Energy Regulatory Commission and EPA officials, and I personally want to thank our Federal colleagues for their commitment to these discussions. But a dialogue does not substitute for the needed study of the reliability and cost impacts of these rules.

Thank you for the opportunity to testify today and I look forward

answering questions.

[The prepared statement of Mr. Wright follows:]

BEFORE THE UNITED STATES HOUSE OF REPRESENTATIVES

COMMITTEE ON ENERGY AND COMMERCE, SUBCOMMITTEE ON ENERGY AND POWER

TESTIMONY OF THE HONORABLE DAVID A. WRIGHT PRESIDENT, NATIONAL ASSOCIATION OF REGULATORY UTILITY COMMISSIONERS COMMISSIONER, SOUTH CAROLINA PUBLIC SERVICE COMMISSION

ON BEHALF OF THE NATIONAL ASSOCIATION OF REGULATORY UTILITY COMMISSIONERS

ON

"American Energy Initiative: EPA Greenhouse Gas Regulations"

June 19, 2012



National Association of Regulatory Utility Commissioners 1101 Vermont Ave, N.W., Suite 200 Washington, D.C. 20005 Telephone (202) 898-2200, Facsimile (202) 898-2213 Internet Home Page http://www.naruc.org

Summary for Testimony of the Honorable David A. Wright On Behalf of the National Association of Regulatory Utility Commissioners (NARUC)

Representing the State public service commissioners who regulate the nation's power providers, NARUC's perspective on the proposed EPA greenhouse gas regulations involves the impact of these regulations on the utilities we regulate and, by extension, their consumers.

NARUC adopted the following recommendations, urging EPA in its implementation of power sector regulations to:

- · Avoid compromising energy system reliability;
- · Seek ways to minimize cost impacts to consumers;
- Ensure that its actions do not impair the availability of adequate electricity and natural gas resources;
- Consider cumulative economic and reliability impacts in the process of developing multiple environmental rulemakings that impact the electricity sector;
- Recognize the needs of States and regions to deploy a diverse portfolio of cost-effective supply-side and demand-side resources based on the unique circumstances of each State and region;
- Encourage the development of innovative, multi-pollutant solutions to emissions
 challenges as well as collaborative research and development efforts in conjunction with
 the U.S. Department of Energy;
- Employ rigorous cost-benefit analyses consistent with federal law, in order to ensure sound public policy outcomes;
- Provide an appropriate degree of flexibility and timeframes for compliance that recognizes the highly localized and regional nature of the provision of electricity services in the U.S;
- Engage in timely and meaningful dialog with State energy regulators in pursuit of these
 objectives; and
- Recognize and account for, where possible, State or regional efforts already undertaken to address environmental challenges.

Good Morning Chairman Whitfield, Ranking Member Rush, and Subcommittee Members.

Thank you for the opportunity to appear before you today.

My name is David Wright. I am Vice Chairman of the South Carolina Public Service Commission and I serve as president of the National Association of Regulatory Utility Commissioners (NARUC), on whose behalf I am speaking this morning. I appreciate the opportunity to present NARUC's views on the Environmental Protection Agency's proposed greenhouse gas regulations under the Clean Air Act. I will also address my personal views from the perspective of a commissioner from South Carolina.

NARUC is a quasi-governmental, non-profit organization founded in 1889. Our membership includes the public utility commissions serving all States and territories. NARUC's mission is to serve the public interest by improving the quality and effectiveness of public utility regulation. Our members regulate the retail rates and services of electric, gas, water, and telephone utilities. We are obligated under the laws of our respective States to assure the establishment and maintenance of such utility services as may be required by the public convenience and necessity and to assure that such services are provided under rates and subject to terms and conditions of service that are just, reasonable, and non-discriminatory.

NARUC understands the significant impact EPA's Proposed Standards of Performance for Greenhouse Gas Emissions for New Stationary Sources: Electric Utility Generating Units regulations (Proposed NSPS for GHGs) and other finalized and pending environmental

regulations will have on the power sector. To this end, NARUC adopted policy positions that stress the need for flexibility in compliance requirements, coordination among generating plants, and continued dialogue with federal and State utility and environmental regulators to ensure that compliance with these regulations does not hinder system reliability and minimizes cost impacts on consumers.

Proposed NSPS for Greenhouse Gases Background

The Proposed NSPS for GHGs will limit carbon dioxide emissions from new fossil-fuel fired power plants to 1,000 lbs CO₂/MWh per year. The rule arises under Clean Air Act section 111, which governs pollution from stationary sources such as power plants that have been deemed by the EPA Administrator as a category of sources that "causes, or contributes significantly, to, air pollution which may reasonably be anticipated to endanger public health or welfare." The standard for emissions is defined as, "best system of emissions reductions, (taking into account the cost of achieving such reduction and any non-air quality health and environmental impacts and energy requirements) the Administrator determines has been adequately demonstrated." The Proposed NSPS for GHGs is subject to a settlement agreement where States and environmental entities challenged EPA's failure to address GHG emissions in the 2006 Electric Utility Steam Generating Units NSPS.

EPA proposes to combine coal-fired power plants and natural gas combined-cycle power plants into a single category for the Proposed NSPS for GHGs. The emission limit established for this new combined source category is based on the demonstrated performance of natural gas

combined-cycle units (NGCC) "which are currently in wide use throughout the country, and are likely to be the predominant fossil fuel technology for new generation in the future."

While the Clean Air Act applies NSPS to new and modified sources, the Proposed NSPS for GHGs does not propose a standard for modifications, stating that "sources not subject to the new source performance standards would be treated as existing sources subject to section 111(d)."

The Proposed NSPS for GHGs excludes transitional sources, defined as "a coal-fired power plant that has received approval for its completed PSD [Prevention of Significant Deterioration] preconstruction permit... and that commences construction within 12 months of the date of this proposal." EPA estimates that there are 15 sources that may qualify as transitional sources. The rule also excludes reconstructions from the Proposed NSPS for GHGs.

The Proposed NSPS for GHGs does not provide guidance to the States for promulgating requirements for existing sources, under Clean Air Act 111(d), but the Proposal anticipates future standards for existing sources, and the settlement agreement that catalyzed this NSPS directs EPA to issue guidance for existing affected generating units.

NARUC's Perspective

NARUC does not take a position on the merits of this or any other EPA regulation at this time. However, the Proposed NSPS for GHGs raises concerns regarding resource diversity, consumer costs, and uncertainty for existing sources. These concerns are heightened if one considers previous and future EPA rules that have, or will have, an impact upon electric

generation reliability, consumer costs and resource diversity in concert with the proposed NSPS for GHGs.

Diversity of Resources

NARUC has encouraged EPA to recognize the needs of States and regions to deploy a diverse portfolio of cost-effective supply-side and demand-side resources based on their own unique circumstances and characteristics. The proposed NSPS for GHGs combines two otherwise distinct categories, electric-steam generating units and combined-cycle generating units, based on the fact that they "serve the same function, that is to serve baseload and intermediate demand." This may create a challenge to resource diversity.

The Proposed NSPS states that, "in light of a number of economic factors, including the increased availability and significantly lower price of natural gas, energy industry modeling forecasts uniformly predict that few, if any, new coal-fired power plants will be built in the foreseeable future." EPA "recognize[s] that some owners/operators may nevertheless seek to construct new coal-fired capacity. This may be beneficial from the standpoint of promoting energy diversity and this proposal does not interfere with construction of new coal-fired capacity."

The rule asserts that it does not preclude the development of coal-fired capacity, but it bases its NSPS on the emissions rates for natural gas combined-cycle plants rather than maintaining separate categories and standards for coal and natural gas plants.

NGCC qualifies as the ''best system of emission reduction'' (BSER) that the EPA has determined has been adequately demonstrated because NGCC emits the least amount of CO_2 and does so at the least cost. We propose that a NGCC facility is the best system of emission reduction for two main reasons. First, natural gas is far less polluting than coal. Combustion of natural gas emits only about 50 percent of the CO_2 emissions that the combustion of coal does per unit of energy generated. Second, new natural gas-fired EGUs are less costly than new coal-fired EGUs, and as a result, our Integrated Planning Model (IPM) model projects that for economic reasons, natural gas-fired EGUs will be the facilities of choice until at least 2020....

The Proposed GHG NSPS recognizes that some power suppliers may want to build coal plants for resource diversity and suggests a 30-year averaging alternative for coal plants that may exceed the 1,000 lbs CO₂/MWh in the first ten years, and then make up these emissions through reducing emissions below threshold for the next 20 years to meet the BSER standard by averaging those 30 years. NARUC supports flexibility such as that provided in the 30-year averaging mechanism.

The decision to combine coal and natural gas combined-cycle categories for the purpose of the Proposed NSPS for GHGs and basing the BSER on the combined cycle emissions favors natural gas-fired plants. The Proposed GHG NSPS indicates that, "The best performing subbituminous-fired EGU has maintained a 12-month emissions rate of 1,730 lb CO2/MWh." Even the best performing coal units cannot meet the NSPS without CCS. The Proposed NSPS for GHG goes on to state that, "we are not proposing that CCS, including the 30-year averaging compliance option, does or does not qualify as the BSER adequately demonstrated" but solicits comments on that decision. A commitment to resource diversity would encourage a separate

NSPS BSER for coal-fired plants and natural gas combined cycle units, keeping the categories separate as they have been historically.

Cost to Consumers

NARUC commissioners are primarily economic regulators who are charged by State law to protect the public interest in affordable and reliable electric service. The Proposed NSPS for GHGs identifies the current trend of low natural gas prices. The price of natural gas, however, like any commodity, can be volatile—the more dependent a system is on a particular fuel, the more risk to the consumer from this volatility. Additionally, depending on natural gas-fired plants increases concerns around gas and electric interdependencies that need to be addressed in order to ensure the continued reliability of the electric grid. Further, while the NSPS for GHGs estimates that it has no cost because the models suggest that all generation developers will build natural gas combined-cycle units, in the case that someone builds coal for resource diversity or other purposes, there will be increased costs (probably because of CCS) associated with coal. The Proposed NSPS for GHGs recognizes this cost and suggests that government subsidies are necessary for building coal with CCS. See, e.g. 77 Fed. Reg. 22,418 and 22,422 (discussing the six transitional sources that will install CCS and have DOE loan guarantees or grants to do so).

Uncertainty for Existing Sources

In many regions, State commissioners are currently reviewing significant cost recovery requests for power plant compliance plans with the Mercury and Air Toxics Standard (77 Fed. Reg. 9,304). The investment decisions may be impacted by the Proposed NSPS for GHGs, but the impact the rule will have on these existing sources remains uncertain.

The proposed NSPS reiterates the established approach that installation of pollution control equipment, such as those required under MATS, does not count as a modification that would trigger the NSPS.

EPA has gone further and excluded all modifications and reconstructions from the NSPS. While NARUC does not have a position on EPA's approach, we are concerned that this may raise legal challenges and extend uncertainty for existing sources. Further, the statute, the settlement agreement, and the Proposed NSPS for GHGs indicate that a NSPS standard promulgated under 111(b) would lead to a standard under 111(d) for existing sources that would be covered by the NSPS as if they were new sources. The proposed NSPS for GHGs itself states that "EPA anticipates that [it will] promulgate at the appropriate time, [standards] for existing sources under 111(d)." Uncertainty about these 111(d) requirements will complicate retrofit investment and cost recovery decisions. No one wants to pour millions of dollars into retrofitting a plant to see it close down based on NSPS for GHG standards for existing sources.

Other Rules

In addition to this Proposed Rule, several other rules will impact the Utility Sector, including the Mercury and Air Toxics Standard, 77 Fed. Reg. 9304 (Feb. 16, 2012), the Cross-State Air Pollution Rule: "Federal Implementation Plans: Interstate Transport of Fine Particulate Matter and Ozone and Correction of SIP Approvals," 76 Fed. Reg. 48208 (Aug. 8, 2011) Stayed by the DC Circuit Court of Appeals); the Coal Combustion Residual proposed rule 75 Fed. Reg. 35127 (June 21, 2010); the National Pollution Discharge Elimination System, Clean Water Act 316(b) proposed rule 76 Fed. Reg. 22174 (April 20, 2011). These rules must be evaluated in concert when making investment decisions and cost calculations.

I would now like to take my NARUC hat off and provide some of my personal observations as a State utility regulator.

I, David Wright, am very concerned about the whole suite of regulations that EPA has adopted, proposed, or intends to propose that affect the electric utility sector. This includes the rule being discussed at this hearing on greenhouse gas emissions from new electric generation and the rule EPA said it will issue that applies to greenhouse gas emissions from existing generation. This suite also includes EPA's mercury regulation, (the so-called "MATS" rule), the Cross-State Air Pollution Rule (CSAPR), and others.

As a public utility commissioner, I am ultimately accountable to the electric ratepayer.

When electric bills go up, I get the calls from irate consumers, so naturally I am concerned about

the impact these rules will likely have on electric rates. I am not here to criticize specific provisions in any of the EPA rules – but I am here to express concern about the prospect of rate increases, perhaps significant rate increases, that these rules will create.

For example, EPA's own assessment of the MATS rule, estimates costs of \$9.6 billion per year. When added to assessments of the other EPA rules, these costs will be even higher.

In a September 2011 study performed for the American Coalition for Clean Coal Electricity (ACCCE) entitled *Potential Impacts of EPA Air, Coal Combustion Residuals, and Cooling Water Regulations*, National Economic Research Associates (NERA) analyzed the impact of four EPA rules –MATS, CSAPR, the coal-combustion residuals rule, and the cooling water intake structures regulation – and estimated costs of approximately \$21 billion per year over the period from 2012 to 2020. The present value of these costs is \$127 billion. The rules would cause average U.S. retail electricity prices to increase by approximately 6.5 percent over the period 2012 to 2020, with prices in certain regions increasing considerably more than that. Henry Hub natural gas prices would increase by 10.7 percent on average, according to the study.

A more recent NERA analysis for ACCCE analyzed just the effects of the MATS rule. NERA used EPA's retrofit assumptions and costs to project impacts of the final MATS rule. It found that compliance costs for the electric sector in 2015 are \$10.4 billion. Total compliance costs are \$94.8 billion.

These cost numbers are eye opening and will have a significant effect on ratepayers. As EPA adds new rules, such as its greenhouse gas rules, these numbers will most certainly go up.

It also concerns me that the policies being pursued today actually make it harder for our States and regions to develop diverse resource portfolios by eliminating the use of coal, which will force us to overly rely on natural gas. I am fuel neutral, but resource diversity is critically important in the electric sector. As a regulator, I am responsible for ensuring that the long-term, high capital decisions made by utilities will not overburden their ratepayers. Yet no one can predict the future, especially when that future is reliant on a historically volatile commodity like natural gas. It is therefore important that we as a country maintain the ability to invest in a diverse portfolio of resources so that our ratepayers are protected against price increases that one particular fuel may experience.

Let me drive this point home. Just a few years ago, natural gas prices exceeded \$14/MMBTU. Recently they went down to around \$2.00. It is a mistake to assume these low gas prices will last forever. We must be allowed to keep all fuels, including coal, in our resource mix in case gas prices again spike.

I am also concerned about the impact EPA's regulations will have on the reliability of the grid. The North American Electric Reliability Corporation has termed EPA's regulations significant – the number one risk to grid reliability in the nation.

Part of my concern is that there has never been a formal true reliability assessment of EPA's regulations. EPA's assessments have been resource adequacy assessments, where EPA determines whether the total amount of retirements in a particular region will cause regional reserve margins to fall below acceptable levels. But the true reliability impacts occur locally, because particular units that might be forced into retirement by EPA's regulations are needed for local reliability purposes, such as voltage support or black-start capability. And the potential reliability problems that could ensue, while they might begin in particular local areas, have the potential for cascading into much larger areas.

Last year, because of concern that the reliability impacts of EPA's rules have not been adequately assessed, my agency, the South Carolina Public Service Commission, along with our Office of Regulatory Staff, petitioned the Federal Energy Regulatory Commission (FERC) to establish a joint federal-State board to study the reliability implications of EPA's rules. A number of other State public service commissions filed in support of this effort. While FERC denied the petition, they agreed to establish a continuing dialogue with NARUC on the issue. The first FERC-NARUC Forum on Reliability and the Environment took place in February, and we will meet again this July. The forum proved to be a successful venue for all parties to discuss these issues. We appreciate FERC agreeing to meet with us, and I personally appreciate the participation of EPA so far.

But having a dialogue does not substitute for the needed study, and it does not ameliorate concerns about what the reliability impacts will be and what it will cost to comply with the EPA regulations without impairing grid reliability. In fact, as I look around the country at what some

of the regional transmission organizations and independent organizations are saying will occur as a result of the EPA rules, my concerns are intensified.

- Both the Electric Reliability Council of Texas and the Southwest Power Pool have expressed alarm about blackouts if the Cross-State Air Pollution Rule, which has been stayed in court, were to go into effect.
- The Midwest Independent Transmission System Operator says that 61 of 71 GW of baseload coal in the MISO region will require some action to comply with EPA's regulations over the next three years or sooner. MISO says 13 GW of those 61 GW are at immediate risk of retirement. MISO projects retrofit or replacement costs of \$33 billion. According to MISO, reserve margins are "plummeting." "Retirement of 13 GW of coal-fired generation would cause MISO's current projected reserve margin for 2016 to plunge to 8.3 percent 9.1 percent short of our required 17.4 percent reserve margin."
- PJM is projecting that an unprecedented number of transmission projects will be needed to remove bottlenecks caused by unit retirements 130 separate projects at a cost of nearly \$2 billion and these all have to be completed within the next several years. Delays will threaten reliability and could cause significant electric rate increases.

In sum, if there is one message I would like to leave with the committee, it is that EPA must pause in its regulatory processes until the impact of its regulations, both as to cost to ratepayers and the reliability of the electric system, are better understood. There has to be a

better way to harmonize the need for the country to continue to improve the environmental performance of the electric utility industry with the need to keep electric rates stable and low. In these difficult economic times, the people of my home State, and I'm sure other States as well, cannot afford significant rate increases.

Conclusion

In conclusion, NARUC appreciates the opportunity to present testimony discussing the Proposed NSPS for GHGs and encourages Congress and EPA to consider the principles outlined in our resolutions which are attached, with a specific focus on resource diversity, consumer costs, and the challenges of uncertainty for existing sources when finalizing the NSPS for GHGs.

ATTACHMENTS

Resolution on the Role of State Regulatory Policies in the Development of Federal Environmental Regulation ¹

WHEREAS, The National Association of Regulatory Utility Commissioners (NARUC) recognizes that the U.S. Environmental Protection Agency (EPA) is engaged in the development of public health and environmental regulations that will directly affect the electric power sector, and

WHEREAS, EPA is expected to promulgate regulations to be implemented by State environmental regulators concerning the interstate transport of sulfur dioxide and nitrogen oxides, cooling water intake, emissions of hazardous air pollutants and greenhouse gases, release of toxic and thermal pollution into waterways, and management of coal combustion solid waste; and

WHEREAS, NARUC at this time takes no position regarding the merits of these EPA rulemakings; and

WHEREAS, Such regulations under consideration by EPA could pose significant challenges for the electric power sector, with respect to the economic burden, the feasibility of implementation by the contemplated deadlines and the maintenance of system reliability; *and*

WHEREAS, EPA is expected to provide opportunities for public comment and input with respect to forthcoming regulations; and

WHEREAS, Compliance with forthcoming environmental regulations will affect consumers differently depending upon each State's electricity market and the nature of the decisions made by State regulators; *and*

WHEREAS, Addressing compliance with multiple regulatory requirements at the same time may help to reduce overall compliance costs and minimize risk assuming reasonable flexibility with respect to deadlines; *and*

WHEREAS, State utility regulators are well positioned to evaluate risks and benefits of various resource options through policies that appropriately account for and mitigate the risks arising from compliance with pending regulations; *and*

WHEREAS, Cooperation between utility commissions and environmental regulators can promote greater policy coordination and integration and improve the quality and effectiveness of electricity sector regulation; *and*

WHEREAS, State utility regulators, by working with the power sector and State and federal environmental regulators, can help to facilitate least-cost compliance with public health and environmental goals; and

¹ Based upon Resolution on Implications of Climate Policy for Ratepayers and Public Utilities, adopted by NARUC Board of Directors on July 18, 2007

WHEREAS, State utility regulators can help to minimize environmental risk as well as uncertainty regarding reliability and customer rate impacts by requesting regulated utilities with fossil generation to develop plans that evaluate all relevant environmental rulemakings at U.S. EPA; now, therefore, be it

RESOLVED, That the Board of Directors of the National Association of Regulatory Utility Commissioners, convened at its 2011 Winter Committee Meetings in Washington D.C., urges the EPA to ensure that, as it develops public health and environmental programs, it will:

- · Avoid compromising energy system reliability;
- Seek ways to minimize cost impacts to consumers;
- Ensure that its actions do not impair the availability of adequate electricity and natural gas resources;
- Consider cumulative economic and reliability impacts in the process of developing multiple environmental rulemakings that impact the electricity sector;
- Recognize the needs of States and regions to deploy a diverse portfolio of cost-effective supply-side and demand-side resources based on the unique circumstances of each State and region;
- Encourage the development of innovative, multi-pollutant solutions to emissions
 challenges as well as collaborative research and development efforts in conjunction with
 the U.S. Department of Energy;
- Employ rigorous cost-benefit analyses consistent with federal law, in order to ensure sound public policy outcomes;
- Provide an appropriate degree of flexibility and timeframes for compliance that recognizes the highly localized and regional nature of the provision of electricity services in the U.S;
- Engage in timely and meaningful dialog with State energy regulators in pursuit of these
 objectives; and
- Recognize and account for, where possible, State or regional efforts already undertaken to address environmental challenges; and be it further

RESOLVED, That NARUC urges State utility regulators to actively engage with State and federal environmental regulators and to take other appropriate actions in furtherance of the goals of this resolution.

Sponsored by the Committees on Electricity and Energy Resources and the Environment Adopted by the NARUC Board of Directors February 16, 2011

Resolution on Increased Flexibility for the Implementation of EPA Rulemakings

WHEREAS, The Board of Directors of the National Association of Regulatory Utility Commissioners (NARUC) adopted a resolution on the *Role of State Regulatory Policies in the Development of Federal Environmental Regulations* on February 16, 2011; including the following statements:

- WHEREAS, NARUC at this time takes no position regarding the merits of these EPA rulemakings; and
- WHEREAS, Such regulations under consideration by EPA could pose significant challenges for the electric power sector and the State Regulatory Commissions with respect to the economic burden, the feasibility of implementation by the contemplated deadlines and the maintenance of system reliability; and

WHEREAS, NARUC wishes to continue to advance the policies set forth in the resolution as it relates to the proposed EPA rulemakings concerning the interstate transport of sulfur dioxide and nitrogen oxides, cooling water intake, emissions of hazardous air pollutants and greenhouse gases, release of toxic and thermal pollution into waterways, and management of coal combustion solids; *and*

WHEREAS, NARUC recognizes that a reliable energy supply is vital to support the nation's future economic growth, security, and quality of life; *and*

WHEREAS, There are many strategies available to States and utilities to comply with EPA regulations, including retrofits and installation of pollution control equipment, construction of new power plants and transmission upgrades to provide resource adequacy and system security where needed when power plants retire, purchases of power from wholesale markets, demand response, energy efficiency, and renewable energy policies – the collection of which can be implemented at different time frames by different interested parties and may constitute lower-cost options that provide benefits to ratepayers; and

WHEREAS, A retrofit timeline for multimillion dollar projects may take up to five-plus years, considering that the retrofit projects will need to be designed to address compliance with multiple regulatory requirements at the same time and requiring several steps that may include, but are not limited to: utility regulatory commission approval, front-end engineering, environmental permitting, detailed engineering, construction and startup; and

WHEREAS, Timelines may also be lengthened by the large number of multimillion dollar projects that will be in competition for the same skilled labor and resources; *and*

WHEREAS, NARUC recognizes that flexibility with the implementation of EPA regulations can lessen generation cost increases because of improved planning, selection of correct design for the resolution of multiple requirements, greater use of energy efficiency and demand-side resources, and orderly decision-making; *and*

WHEREAS, Some generators that will be impacted by the new EPA rulemakings are located in constrained areas or supply constrained areas and will need time to allow for transmission or new generation studies to resolve reliability issues; *and*

WHEREAS, The North American Electric Reliability Corporation (NERC) and regional RTOs will need time to study reliability issues associated with shutdown or repowering of generation; and

WHEREAS, NARUC recognizes that flexibility will allow time for these needed studies, and

WHEREAS, The Federal Energy Regulatory Commission (FERC), through its oversight of NERC, has authority over electric system reliability, and is in a position to require generators to provide sufficient notice to FERC, system operators, and State regulators of expected effects of forthcoming health and environmental regulations on operating plants to allow an opportunity for meaningful assessment and response to reliability claims; *now*, *therefore be it*

RESOLVED, That the Board of Directors of the National Association of Regulatory Utility Commissioners, convened at its 2011 Summer Committee Meetings in Los Angeles, California, supports efforts to promote State and federal environmental and energy policies that will enhance the reliability of the nation's energy supply and minimize cost impacts to consumers by:

- Allowing utilities to coordinate the closure and/or retrofitting of existing electric
 generating units in an orderly manner that will ensure the continued supply of electricity
 and that will allow power generators to upgrade their facilities in the most cost effective
 way, while at the same time achieving attainable efficiency gains and environmental
 compliance; and
- Allowing regulatory options for units that are necessary for grid reliability that commit to retire or repower, and
- · Allowing an EPA-directed phasing-in of the regulation requirements; and
- Establishing interim progress standards that ensure generation units meet EPA regulations in an orderly, cost-effective manner, and be it further

RESOLVED, That Commissions should encourage utilities to plan for EPA regulations, and explore all options for complying with such regulations, in order to minimize costs to ratepayers; and be it further

RESOLVED, That FERC should work with the EPA to develop a process that requires generators to provide notice to FERC, system operators, and State regulators of expected effects of forthcoming EPA regulations on operating plants to allow an opportunity for meaningful assessment and response to reliability issues; *and be it further*

RESOLVED, That NARUC and its members should actively coordinate with their environmental regulatory counterparts, FERC, and the electric power sector ensuring electric system reliability and encourage the use of all available tools that provide flexibility in EPA regulation requirements reflecting the timeline and cost efficiency concerns embodied in this

 $resolution\ to\ ensure\ continuing\ emission\ reduction\ progress\ while\ minimizing\ capital\ costs,\ rate\ increases\ and\ other\ economic\ impacts\ while\ meeting\ public\ health\ and\ environmental\ goals.$

Sponsored by the Subcommittee on Clean Coal and Carbon Sequestration and the Committees on Electricity and Energy Resources and the Environment Adopted by the NARUC Board of Directors July 20, 2011

Mr. WHITFIELD. Thank you, Mr. Wright.

And Mr. Doniger, you are recognized for a 5-minute opening statement.

STATEMENT OF DAVID D. DONIGER

Mr. Doniger. Thank you, Mr. Chairman and Mr. Rush.

Nearly two million Americans, more than double the previous record, have already raised their voices in comments in support of EPA's proposed carbon pollution standard for new power plants, and I want to emphasize that the standard that has been proposed is for new plants. And more than 60 percent of Americans support letting carbon pollution standards be set by EPA according to a bipartisan poll conducted for the American Lung Association.

Carbon pollution is imposing staggering health costs through heat waves, more smog, and increased extreme weather. There are two Supreme Court decisions that confirm now that it is EPA's job under the Clean Air Act, as Congress wrote it, to protect the American people from carbon pollution from both cars and power plants. The second one, which you haven't heard about today, is the decision from last June, American Electric Power v. Connecticut

By proposing standards for new plants under the Clean Air Act, EPA is simply following the law and the science. Power plants are the largest U.S. source of greenhouse gases, 2.3 billion metric tons

per year of CO2, 40 percent of the U.S. total.

NRDC supports EPA's decision to establish a single category for all new plants that perform the same basic function of base-load and intermediate-load power generation. However, they are fueled. Owners and operators of plants that haven't built yet have flexibility to choose among these technologies when building the plants needed to serve this function.

The proposed new standard recognizes that the market has already turned away from building new conventional coal plants due to low-cost natural gas, strong growth in wind and solar, big opportunities to reduce electricity needs through energy efficiency, and even the potential for nuclear power. So analysts from government, from the power industry, from the financial world, from American Electric Power, from Duke Power, they all forecast that we will be meeting our electricity needs over the next two decades without the need to construct new coal-fired plants. Thus, despite all the rhetoric and scapegoating, this standard will impose no additional costs on the electric industry, no additional costs on ratepayers, and have no adverse impact on jobs.

NRDC agrees that carbon capture and storage-equipped plants are technically feasible today and can meet the proposed standard. We support provisions that EPA has included to facilitate construction of those plants. We have long supported well designed legislative measures to accelerate deployment of CCS, including tens of billions of dollars of support that would have been provided to power companies for adopting CCS under the Climate and Energy

legislation passed by the House in the last Congress.

The EPA needs to move forward to start the joint Federal and State process of cutting the 2.3 billion tons of carbon pollution from the existing power plant fleet under Section 111(d). It is just plain false to claim that existing coal plants will be required to meet the new plant standard. The criteria and procedures for new and existing plants are different. They require EPA to consider costs, achievability, affordability, and NRDC believes that significant cost-effective carbon pollution reductions can and should be made within the existing legal framework.

Thank you.

[The prepared statement of Mr. Doniger follows:]



NATURAL RESOURCES DEFENSE COUNCIL

Testimony of David D. Doniger Policy Director and Senior Attorney, Climate and Clean Air Program Natural Resources Defense Council

Hearing on the American Energy Initiative: A Focus on EPA's Greenhouse Gas Regulations

Subcommittee on Energy and Power Committee on Energy and Commerce House of Representatives June 19, 2012

Summary

- Nearly 2 million Americans more than double the previous record have already raised their
 voices in comments to support EPA's proposed carbon pollution standard for power plants. More
 than 60 percent of Americans support EPA's setting carbon pollution standards according to a recent
 bipartisan poll conducted for the American Lung Association.
- Carbon pollution is imposing staggering health and environmental costs, including by contributing to
 more severe heat waves and worsened smog pollution and by fueling increasingly extreme weather
 that takes lives and causes billions of dollars in property damage each year. June 2011-May 2012
 was the warmest 12-month stretch ever in the U.S.
- Two Supreme Court decision, Massachusetts v. EPA and American Electric Power v. Connecticut, confirm that it is EPA's job under the Clean Air Act as Congress enacted it to protect the American people from carbon pollution from both cars and power plants.
- By proposing standards for new power plants under Section 111(b) of the Clean Air Act, EPA is simply following the law and the science. Power plants are the largest U.S. source of greenhouse gases: 2.3 billion metric tons per year of CO₂ emissions, approximately 40 percent of the U.S. total.
- NRDC supports EPA's decision to establish a single category including all new plants, however
 fueled, that perform the same function of base-load and intermediate-load power generation.
 Owners and operators have the flexibility to choose among these technologies when building new
 plants to serve this function.
- The proposed new source standard recognizes that the market has already turned away from
 building new conventional coal plants due low-cost natural gas, strong growth in wind and solar
 power, big opportunities to improve energy efficiency, and even the potential for nuclear power.
 Analysts from government, the power industry, and the financial world all forecast that we will meet
 electricity needs over the next two decades without constructing new coal-fired plants.
- Thus, despite all the rhetoric and scape-goating, this standard will impose no additional costs on the industry or on electricity rate-payers and will have no adverse impact on jobs.
- NRDC agrees that CCS-equipped coal-fired plants are technically feasible today and can meet the
 proposed standard. NRDC supports proposed provisions to facilitate construction of CCS-equipped
 plants. NRDC has long supported well-designed legislative measures to accelerate the deployment
 of CCS, including tens of billions of dollars of support that would have been provided to power
 companies for adopting CCS under the climate and energy legislation considered in the last
 Congress.
- EPA needs to move forward to start the joint Federal-state process of cutting the 2.3 billion tons of
 dangerous carbon pollution from the existing fleet of power plants under Section 111(d). It is just
 plain false to claim that existing coal plants will be required to meet the new plant standard. The
 criteria and procedures for new and existing plants are different. EPA and the states must set
 existing source standards that are achievable and affordable. NRDC believes significant, costeffective reductions can and should be made within that legal framework.

Thank you Chairman Whitfield and Ranking Member Rush for the opportunity to testify on behalf of the Natural Resources Defense Council about the Environmental Protection Agency's proposed carbon pollution standard for new electric power plants, and related actions to carry out the agency's responsibilities under the Clean Air Act to address the pollution that drives dangerous climate change. Founded in 1970, NRDC is a national nonprofit environmental organization of scientist, lawyers, and environmental specialists with more than 1.3 million members and online activists, served from offices in New York, Washington, Chicago, San Francisco, Los Angeles, and Beijing. I am policy director of NRDC's Climate and Clean Air Program, and our principal lawyer on climate change matters. I have been with NRDC twice, from 1978 through 1992 and from 2001 to the present. In the 1990's I served as director of climate change policy in the EPA Office of Air and Radiation.

Although the period for public comment has not yet finished, already nearly two million citizens across this country – more than double the previous record number in the EPA's history – have raised their voices in comments to support action under the Clean Air Act to curb the dangerous carbon pollution from our fleet of power plants.

This record outpouring should come as no surprise, since public polling consistently shows the American people supports the Environmental Protection Agency's doing its job, under the laws that Congress enacted, to protect their health and their future. For example, 60 percent of the American people support EPA's setting standards for carbon dioxide pollution, even after hearing the arguments against that many of you are making today, according to the most recent bipartisan poll conducted for the American Lung Association.¹

Americans in record numbers are concerned, because scientists tell us that carbon pollution is imposing, and will continue to impose, staggering health and environmental costs. The health consequences include contributing to more severe heat waves and worsened smog pollution, which

 $^{^1\} http://www.prnewswire.com/news-releases/american-lung-association-bipartisan-poll-shows-strong-public-support-for-lifesaving-clean-air-act-116319864.html.$

trigger more asthma attacks and other life-threatening illnesses. Carbon pollution is driving climate change that is fueling increasingly extreme weather, including more extreme heat, more extreme precipitation, devastating tropical storms, rising sea levels and more severe coastal flooding, and many other threats to life, limb, and property.² Americans had extraordinary personal experiences with extreme weather last year. Across the country, 2011 gave us 3,251 broken monthly weather records -- so many extreme events that NRDC created an online map tool to track them and the destruction they caused.³ 2012 is off to another record-smashing start: March 2012 was the hottest March in the contiguous US since record-keeping began back in 1895.⁴ May 2012 marked the end of the warmest 12-month stretch ever in the US.⁵

Looking back over the past decade, case studies of six extreme weather events – heat waves, wildfires, floods, smog episodes, hurricanes, and disease outbreaks – yielded health-related costs of more than \$14 billion. A new study by the Rocky Mountain Climate Organization and NRDC shows that the number of extreme rainstorms – storms dumping more than three inches of rain in a day – has doubled over the last 50 years in eight Midwestern states, causing huge flooding losses.

² IPCC, 2012: Summary for Policymakers. In: Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation [Field, C.B., V. Barros, T.F. Stocker, D. Qin, D.J. Dokken, K.L. Ebi, M.D. Mastrandrea, K.J. Mach, G.-K. Plattner, S.K. Allen, M. Tignor, and P.M. Midgley (eds.)]. A Special Report of Working Groups I and II of the Intergovernmental Panel on Climate Change. Cambridge University Press, Cambridge, UK, and New York, NY, USA, pp. 3-21.

³ NRDC's Extreme Weather Map 2011 website is available at: www.nrdc.org/extremeweather and on NRDC's Climate Change Threatens Health webpages at: www.nrdc.org/climatemaps. Data for the map was taken from the National Oceanic and Atmospheric Administration-National Climatic Data Center (NOAA-NCDC); the methods used to develop the map are described at: http://www.nrdc.org/health/extremeweather/methods.asp (updated Feb. 2012).

⁴NOAA-NCDC (2012) website at: http://www.ncdc.noaa.gov/temp-and-precip/time-series/index.php?parameter=tmp&month=3&year=2012&filter=1&state=110&div=0 ("Contiguous U.S. Temperature: March 1895-2012").

 $^{^{\}rm 5}$ NOAA-NCDC (2012), http://www.ncdc.noaa.gov/sotc/national/2012/5 .

⁶ Knowlton, et al., "Six Climate Change–Related Events In The United States Accounted For About \$14 Billion In Lost Lives And Health Costs," Health Affairs, **30**:11, pp. 2167-76 (Nov. 2011). See also NRDC, "Health and Climate Change: Accounting for Costs," Nov. 2011,

http://www.nrdc.org/health/accountingforcosts/files/accountingcosts.pdf (attached for the record).

⁷ Rocky Mountain Climate Organization & NRDC, "Double Trouble: More Midwestern Extreme Storms," May, 2012, http://www.rockymountainclimate.org/images/DoubledTroubleHigh.pdf.

The Supreme Court's landmark 2007 ruling in *Massachusetts v. EPA*⁸ confirmed that greenhouse gases, just like any other chemicals released into the air, are "air pollutants" under the Clean Air Act.

The Court held that EPA must make a science-based determination whether these pollutants may reasonably be anticipated to endanger public health or welfare, and if so, that EPA must set standards to their emissions under the Clean Air Act. EPA made that endangerment finding in 2009, based on a mountain of scientific evidence that demonstrates that carbon dioxide and other heat-trapping pollutants are already harming, and will continue to harm, the health and well-being of our families, our children, and our communities. You have heard about EPA's other initial steps – the clean vehicle standards and permitting requirements for the biggest new industrial facilities – from Daniel Weiss of the Center for American Progress on the first panel. I will concentrate on the carbon pollution standard proposed in April for new power plants.

The Supreme Court spoke a second time specifically addressing power plants, in June 2011 in American Electric Power v. Connecticut, a confirming that it is EPA's job to protect the American people from power plants' dangerous carbon emissions by setting standards under Section 111 of the Clean Air Act. The "new source performance standard" that EPA has proposed for new power plants under Section 111(b) is a critical step towards providing that protection.

Power plants have long topped the list of categories of industrial stationary sources that contribute significantly to air pollution that endangers public health and welfare. Fossil fuel-fired power plants are responsible for more than 2.3 billion metric tons per year of CO_2 emissions, approximately 40 percent of total U.S. CO_2 , and more than a third of all U.S. greenhouse gas emissions. American power plants account for nearly 10 percent of global CO_2 emissions. By any standard, power plants contribute significantly to dangerous greenhouse gas air pollution. By proposing standards for new power plants under Section 111(b) of the Clean Air Act, EPA is simply following the law and the science. Its proposal

^{8 549} U.S. 497 (2007).

⁹ 131 S.Ct. 2527 (2011).

to set the first national limits on carbon pollution from new power plant, which applies only to new plants, not existing or modified ones, is long overdue.

NRDC supports EPA's determination to establish a single category that includes both natural gasfired generating units and coal-fired generating units. As EPA has found, these units perform the same
function of base-load and intermediate-load power generation, and prospective owners and operators
have the flexibility to choose among these technologies when building new plants to serve this function.

Consequently, NRDC also supports setting a single emissions-rate standard applicable to all new plants
in the category. EPA has proposed 1000 lbs/MWh standard and a range of levels around this mark.

NRDC supports setting the new source standard somewhat below 1000 lbs/MWh because modern new
natural gas combined cycle plants can meet such levels at no additional cost. New coal-fired plants
equipped with carbon capture and storage technology (CCS) can also meet that level, especially with the
30-year averaging provisions that EPA has proposed.

There is no truth to claims that grouping all new plants that perform the same function — whether natural gas- or coal-fired — in the same category under the proposed new source standard is a "de facto ban" on constructing new coal-fired plants, nor to claims that the standard will cause lost jobs and higher utility bills. These are phony arguments. The proposed new source standard actually will impose no additional costs on the industry or on electricity rate-payers and will have no adverse impact on jobs.

The reason is that market realities have already driven decisions on new power plants away from building new conventional coal plants. As Brookings senior economist Peter Wilcoxen explained in April: "To put it simply: the life-cycle costs of coal-fired power are considerably higher than gas-fired power. This is not a theoretical matter: over the last decade, the electric power sector has responded by adding more than about 200 gigawatts of gas-fired capacity and about 2 gigawatts of coal. The US now has considerably more gas-fired capacity than coal-fired capacity and low gas prices will accelerate

that trend even without the EPA decision." He continued: "Finally, because it only rules out an expensive option that wouldn't have been used anyway, the EPA rule will have no significant effect on electricity prices."10

Analysts from government departments, the power industry, and the financial world all agree in forecasting that the nation will meet its electricity needs over the next two decades without constructing new coal-fired plants. 11 Power companies simply aren't planning to build new coal plants due to the availability of low-cost natural gas, strong growth in wind and solar power, big opportunities to improve energy efficiency, and even the potential for nuclear power. For example, the country's largest current CO2 emitter, American Electric Power, stated that the proposed rule "doesn't cause immediate concern" for the company. "We don't have any plans to build new coal plants," said AEP spokesperson Melissa McHenry in March. She continued, "Any additional generational plants we'd build for the next generation will be natural gas." ¹² And Jim Rogers, CEO of Duke Energy, operating in the Carolinas, Indiana, Kentucky, and Ohio, told the National Journal in February: "We're not going to build any coal plants in any event. You're going to choose to build gas plants every time, regardless of what the rule is."13

These market forecasts are robust. EPA's sensitivity analyses in the Regulatory Impact Analysis show that power companies will not choose to construct any new conventional coal-fired plants before 2030 even if natural gas becomes 4-5 times more costly than it is today and power demand increases faster than expected.14

 $^{^{\}rm 10}$ http://mediamatters.org/research/201204020012.

¹¹ See sources cited by Lashof, "Financial Analysts, Private Economists, and Government Forecasters All Agree: Market Realities, Not EPA, Driving New Power Plants Away from Coal," April 2012,

http://switchboard.nrdc.org/blogs/dlashof/financial_analysts_private_eco.html.

12 National Journal, Government Executive (Mar. 27, 2012), http://www.govexec.com/oversight/2012/03/firstmajor-climate-regs-obama-epa-sure-stir-political-debate/41580/ ¹³ National Journal, Need to Know: Energy (Feb. 2, 2012).

¹⁴ EPA Regulatory Impact Analysis for the Proposed Standards of Performance for Greenhouse Gas Emissions for New Stationary Sources: Electric Utility Generating Units, Chapter 5 (March 2012), http://epa.gov/carbonpollutionstandard/pdfs/20120327proposalRIA.pdf.

The proposed new source standard reinforces what most power company executives and investors already understand – that carbon pollution and climate change are serious concerns, and that if and when underlying market economics support a comeback for new coal-fired power plants, they will need to be designed with CCS.

The nation's utilities also have huge money-saving opportunities to shift investments to energy efficiency, which is cheaper than power from either coal or gas-fired plants. By doing so they will create hundreds of thousands of jobs, since it takes a lot more people to upgrade homes, offices, and factories with better insulation and lighting, high performance heating and cooling systems, and more efficient appliances and equipment. Between 2007 and 2011, American electric efficiency budgets more than doubled, from \$2.7 billion to \$6.8 billion, but they have only scratched the surface of the cost-effective efficiency resource that is available to us. 15 According to McKinsey & Co., we could save \$1.2 trillion on our national energy bill while creating almost 1 million jobs if we captured all of this resource. 16

NRDC supports provisions EPA has proposed to facilitate construction of coal-fired plants equipped with CCS. NRDC agrees that CCS-equipped plants are technically feasible today and can be built — and are being built today ¹⁷ — even under current market conditions with subsidies provided under federal law. Further, NRDC agrees with EPA's assessment that further experience with CCS can bring costs down. I will also note that NRDC has long supported well-designed legislative measures to accelerate the deployment of CCS, including tens of billions of dollars of support that would have been provided to power companies for adopting CCS under the climate and energy legislation considered in the last Congress.

¹⁵ Consortium for Energy Efficiency, "Energy Efficiency Picture Emerges," http://www.cee1.org/ee-pe/2011AIR.php3.

¹⁶ McKinsey & Co. , "Electric Power and Natural Gas, Unlocking Energy Efficiency in the U.S. Economy," 6 and 118, McKinseyGlobal Energy and Materials, July 2009,

http://www.mckinsey.com/client_service/electric_power_and_natural_gas/latest_thinking/unlocking_energy_efficiency_in_the_us_economy.

To revample, Mississippi Power Company's Kemper County Plant Ratcliffe is now under construction and will

^{**} For example, Mississippi Power Company's Kemper County Plant Ratcliffe is now under construction and will capture and sequester 65 percent of its carbon dioxide emissions.

As already mentioned, EPA's proposed standards apply to new plants only, not existing or modified ones. Despite some rather clear statutory language to the contrary, EPA has even proposed to treat as existing plants a set of so-called "transitional" coal-fired plants that have permits but not commenced construction yet, provided they do so within a year. Like dozens of other proposals for new coal-fired capacity that have been abandoned because of market realities over the past years, many of these plants probably will not go forward because they lack financing and can't meet other, non-Clean Air Act legal requirements. Indeed, at least one of the transitional plants has already been dropped. Tenaska, which had proposed a coal-fired plant for southern Illinois has dropped it in favor of a new natural gas plant. Further, the majority owner of the proposed Holcomb 2 project, Tri-State Generation and Transmission, Inc., has published and filed with the Colorado Public Utilities Commission a final Electric Resource Plan stating that it has no need for any new coal-fired power until at least 2027. Tri-State's extensive resource planning modeling demonstrated that future demand could be met with a combination of cleaner alternatives, such as demand side management and renewable generation resources. When questioned, Tri-State has advised the press that it planned to delay construction of Holcomb 2.

Going forward, EPA also needs to issue standards and guidelines under Section 111(d) of the Clean Air Act to start the joint Federal-state process of cutting the 2.3 billion tons of dangerous carbon pollution from the existing fleet of power plants. Another false claim you will hear is doing so will wipe out existing coal plants by requiring them to meet the same standard that EPA has proposed for new plants. But this is not what the Act requires. The criteria and procedures under Sections 111(b) and 111(d) are different, and under the statute EPA and the states share the job of setting performance standards for existing sources. EPA and the states have a legal obligation to set standards that are

¹⁸ Integrated Resource Plan / Electric Resource Plan for Tri-State Generation and Transmission Associate, Inc., Submitted to Western Area Power Authority, Colorado Public Utilities Commission (Nov. 2010). Tri-State Generation and Transmission Associate, Inc., Resource Planning Presentation (June 10, 2010).

achievable and affordable. Within that legal framework, NRDC believes significant, cost-effective reductions in the heat-trapping CO_2 from existing power plants can and must be made, and EPA must begin that process forthwith.

In conclusion, the proposed carbon pollution standard for new power plants is another important step that EPA has taken under President Obama to clean up and modernize the nation's two most polluting sectors – the power plants that provide our electricity, and the motor vehicles that move us around. When the second round of carbon pollution and fuel economy standards for new cars and light trucks are finalized later this summer, they will cut carbon pollution in half and double miles per gallon, saving car-owners thousands of dollars at the pump and dramatically cutting our oil dependence. Because of these standards, and the ones set for heavy duty trucks, America's oil use is finally falling, and is expected to continue falling as far as the eye can see, even as oil production grows.

Scientists and the public agree overwhelmly that it is time to start protecting our families and the planet from the clear harm carbon pollution is causing. We owe it to our children to act now. Denial won't change the facts about carbon. It won't keep rising seas from eroding coastal property, just like it won't stop the wind from carrying pollution from one state to the next, mercury from being a brain poison, or soot from lodging in our lungs. Cleaning up pollution shouldn't be about politics. It's about fulfilling the promise to our families and our children that we will protect their health and their future from dangerous air pollution.

Mr. WHITFIELD. Thank you. At this time I recognize Mr. Winberg for a 5-minute opening statement.

STATEMENT OF STEVEN E. WINBERG

Mr. WINBERG. Thank you, Mr. Chairman.

My name is Steve Winberg. I am the vice president for CONSOL Energy Research & Development. CONSOL Energy is a multi-energy producer of both coal and natural gas. I am also the chairman of the FutureGen Industrial Alliance of 501(c)(3) forum to build the world's first commercial-scale, coal-fired, near-zero-emission electric generation plant. I will update you on that in a moment.

Carbon capture and storage, or CCS as it is often called, is the most important technology development effort underway if the world decides to significantly reduce CO2 emissions. It is more important than renewable technology development, more important than any efficiency improvements, and more important than ad-

vances in nuclear energy development.

The reason CCS is so important is because reducing global concentrations of greenhouse gas is not a decision that can be made by the United States. Rather, it is a decision that must be made on a global basis. And according to the International Energy Agency, by 2035, 70 percent of the increasing global economic output will be by non-OECD countries, with China and India leading that growth. The result is that these countries will eclipse the United States CO2 emissions because they will continue to build coal plants to provide affordable electricity to allow them to develop their economies and bring their people out of abject poverty.

With all of this coal generation being built around the world, if we are ever to come close to meeting any of the greenhouse gas reduction targets, CCS is the most important tool we can develop.

Another point worth noting is that these greenhouse gas reduction targets would require CCS on natural gas plants also. We cannot reach these targets by just controlling coal. Unfortunately, CCS is not yet commercially available. We are 10 to 15 years away from when CCS suppliers will be able to provide guarantees, and that assumes that we have significant funding available to commercialize CCS, something that we currently do not have.

EPA's recently proposed greenhouse gas rule would require new coal-fueled power stations to meet a 30-year average CO2 emission of 1,000 pounds per megawatt hour with a maximum CO2 emission rate of 600 pounds per megawatt hour by year 11 of its operation. So in practical terms, this means that a power producer would have to begin installing CCS in year 5 to be ready by year 11. Power producers will not make a multibillion dollar bet that in 5 years CCS technology providers will offer commercial guarantees.

So in effect, what EPA's rule does is eliminate any new coal for years to come because EPA is requiring new coal-fueled power plants to meet a natural gas equivalent CO2 standard before CCS is commercially available. Without guarantees from CCS suppliers, power producers cannot get financing. Without financing, power producers cannot and will not build.

We can commercialize CCS and there are three very specific advancements that are needed. First, we need to invest in breakthrough technologies to reduce the cost of CCS. Second, we need to

develop a national regulatory framework for storing CO2. A Stateby-State patchwork of CO2 storage regulations is simply not workable. Third, we need to build several commercial-scale plants integrated with CCS to understand the cost and operability and to demonstrate that we can safely store CO2 over the long-term.

I mentioned earlier that I am the chair of the FutureGen Industrial Alliance. The FutureGen project is one of these much needed commercial-scale demo projects. The Alliance is a group of coal suppliers, power producers, and equipment suppliers from around the globe and we are working with DOE and Illinois to retrofit a 166 megawatt coal-fired power plant. We will capture and sequester more than 1 million tons of CO2 per year over a period of at least 20 years. The CO2 will be stored about 1 mile underground in a deep saline formation where it will be extensively and transparently monitored to provide the technical knowledge needed to advance clean coal technology. It is imperative that projects like FutureGen get built so that we can commercialize CCS.

So in summary, EPA's proposed greenhouse gas regulation will prevent new coal plants from being built in the United States while it will have virtually no impact on reducing global concentrations of greenhouse gases. This proposed regulation will further weaken our country's global competiveness; prevent us from using coal, a low-cost, abundant domestic natural resource; and undercut U.S. job creation just at the time the U.S. economy appears to be beginning to claw its way out of this deep recession.

Thank you for your time and attention.

[The prepared statement of Mr. Winberg follows:]

Greenhouse Gas Regulations

Presented

to

Chairman Whitfield

Subcommittee on Energy and Power

"The American Energy Initiative"

Presented by:

Steven E. Winberg

Vice President, Research & Development

CONSOL Energy Inc

June 19, 2012

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Summary Points

- Carbon capture and storage (CCS) and carbon capture, utilization and storage (CCUS) are the
 most important technology development efforts underway if the world decides to
 significantly reduce CO₂ emissions from fossil fuels.
- 2. Reducing greenhouse gases is not a unilateral decision that can be made by the US, but rather a decision that must be made on a global basis.
- 3. Seventy percent of the increase in global economic output will be by non-OECD countries with China and India making up 31% and 15% of that growth, respectively. The net result is that these countries will eclipse the US in terms of their CO₂ emissions. With all of this coal-fired generating capacity being built around the world, if we are ever to come close to meeting some of the greenhouse gas reduction targets being debated, CCS/CCUS are the most important tools that we can develop.
- 4. CCUS is an important technology to assist in advancing carbon capture but there is not enough enhanced oil capacity to store all of the CO₂ to meet some of the CO₂ reduction targets being debated and generally, it is too expensive for broad scale deployment. What is needed is commercially-available CCS technologies and this is 10 to 15 years away from the time when CCS suppliers will be able to provide performance guarantees and warrantees. This assumes that we have significant private and public sector funding available for CCS demonstration projects; something that we currently do not have.
- 5. EPA's recently proposed rule titled, Standards of Performance for Greenhouse Gas Emissions for New Stationary Sources: Electric Utility Generating Units would require new coal-fueled power stations to meet a 30 year average CO₂ emission of 1000 lbs./MWH with a maximum CO₂ emission rate of 600 lbs./MWH by year 11 of its operation.
- 6. A power producer would have to begin installing CCS in year 5 to be ready by year 11. Power producers will not make a multi-billion dollar bet that in 5 years, CCS technology providers will offer commercial guarantees. In effect, EPA's rule will eliminate any new coal for years to come because EPA is requiring new coal-fueled power plants to meet a natural gas equivalent CO₂ standard, before CCS technology is commercially available. Without commercial guarantees and warrantees from CCS suppliers, power producers cannot get financing. Without financing, power producers will not build.
- 7. There are a number of very specific CCS advancements that are needed. First, we need to invest in breakthrough technologies that can reduce the cost of capturing and compressing CO₂ from power plants, second, we need to develop a national regulatory framework for storing CO₂ into deep underground formations because a state-by-state patchwork of storage regulations will not work. Finally, we need to build several commercial-scale coal-fueled power plants integrated with CCS to understand the cost and operability and to develop experience with safe, long-term storage of CO₂.
- The FutureGen project is one of these much needed commercial-scale demonstration projects and it is imperative that projects like FutureGen get built so that we can commercialize CCS technology.

Thank you, Congressman Whitfield for holding this important hearing.

My name is Steven Winberg. I am the vice president for CONSOL Energy's Research & Development department. Thank you for giving CONSOL the opportunity to express our views on the very important topic of EPA's greenhouse gas regulations which would require significant reductions of CO_2 emissions from new coal-fueled electricity generation.

CONSOL Energy is the largest producer of high-Btu bituminous coal in the United States.

Named one of America's most admired companies by Fortune magazine, CONSOL Energy has evolved from a single-fuel mining company into a multi-energy producer of both high-Btu coal and natural gas. Together coal and natural gas fuel two-thirds of the nation's power.

I am also the current Chairman of the FutureGen Industrial Alliance, a 501C3 formed to build the world's first commercial scale coal-fueled, near zero emission electricity generation plant. I will update you on this project a little later in my remarks but want to bring to your attention the facts that 1) this is a research project, not a commercial project, and 2) that the United States is nowhere near ready to deploy carbon capture and sequestration on a commercial basis, nor for that matter, is any other country.

My remarks today will focus on the current state of carbon capture and sequestration technology development and I will update this subcommittee on the FutureGen project.

Carbon capture and storage or CCS as it is often called and carbon capture, utilization and storage or CCUS, are the most important technology development efforts underway if the

world decides to significantly reduce CO₂ emissions from fossil fuels. CCS is generally defined as storing CO₂ in deep saline formations and CCUS is generally defined as using the CO₂ for enhanced oil recovery and then storing the CO₂ in the depleted oil field. CCUS is an important technology to assist in advancing carbon capture but there is not enough enhanced oil capacity to store all of the CO₂ to meet some of the CO₂ reduction targets being debated. What is needed is commercially-available CCS technologies and this is 10 to 15 years away from the time when CCS suppliers will be able to provide performance guarantees and warrantees.

CCS and CCUS are more important than renewables technology development, more important than efficiency improvements, and more important than advances in nuclear energy development.

The reason that CCS and CCUS are so important is because reducing global concentrations of greenhouse gases is not a unilateral decision that can be made by the United States. Rather it is a decision that must be made on a global basis. China and India continue to build coal-fueled power plants to power their developing economies and there remain over two billion people or about one third of the world's population that do not have access to electricity. They will continue to use coal to bring themselves out of abject poverty.

According to the International Energy Agency, by 2035, seventy percent of the increase in global economic output – a fundamental driver of energy demand - will be enjoyed by non-

OECD countries with China making up thirty one percent and India fifteen percent of that growth. The net result is that these countries will eclipse the United States in CO₂ emissions because they will continue to build coal-fueled power plants to provide affordable electricity to allow them to develop their economies.

With all of this coal-fired generation being built around the world, if we are ever to come close to meeting some of the greenhouse gas reduction targets being debated, CCS and CCUS are the most important tools we can develop. Another point worth noting is that these greenhouse gas reduction targets would require CCS or CCUS on natural gas plants also. We cannot reach these targets by just controlling coal.

As I stated previously, we are ten to fifteen years away from when CCS suppliers will be able to guarantee this technology and that assumes that we have significant private and public sector funding available for the needed CCS demonstration projects, something that we currently do not have.

EPA's recently proposed rule titled, Standards of Performance for Greenhouse Gas Emissions for New Stationary Sources: Electric Utility Generating Units would require new coal-fueled power stations to meet a thirty year average CO₂ emission of one thousand pounds per megawatt hour with a maximum CO₂ emission rate of six hundred pounds per megawatt hour by year eleven of its operation.

In practical terms, this means that a power producer would have to begin installing CCS in year five to be ready by year eleven. Power producers will not make a multi-billion dollar bet that in five years, CCS technology providers will offer commercial guarantees. As I mentioned earlier, at best, CCS may be commercially ready in ten to fifteen years.

In effect, what EPA's rule does is eliminate any new coal for years to come because EPA is requiring new coal-fueled power plants to meet a natural gas equivalent CO₂ standard, before CCS technology is commercially available. Without commercial guarantees and warrantees from CCS suppliers, power producers cannot get financing. Without financing, power producers cannot build.

What does it take to commercialize CCS?

There are a number of very specific advancements that are needed.

First, we need to invest in breakthrough technologies that can reduce the cost of capturing and compressing CO_2 from power plants.

Second, we need to develop a national regulatory framework for storing CO_2 into deep underground formations. A state-by-state patchwork of CO_2 storage regulations is simply not workable.

Third, we need to build several commercial-scale coal-fueled power plants integrated with CCS or CCUS to understand the cost and operability and to develop experience with measuring, monitoring and verifying that the CO_2 is stored safely for the long-term.

I mentioned earlier that I am Chair of the FutureGen Industrial Alliance. The FutureGen project is one of these much needed commercial-scale demonstration projects. The Alliance is a group of coal suppliers, power producers and equipment suppliers from around the globe working with the U. S. Department of Energy and the State of Illinois to retrofit an existing 166 MW coal-fired power plant in Meredosia, Illinois. We will capture and sequester more than one million tons of CO₂ per year over a period of at least twenty years. The CO₂ will be stored about one mile underground in a deep saline sandstone formation where it will be extensively and transparently monitored to provide the technical knowledge needed to advance clean coal technology.

It is imperative that projects like FutureGen get built so that we can commercialize CCS technology.

EPA's proposed greenhouse gas regulation will prevent new coal plants from being built in the United States while it will have virtually no impact on reducing global concentrations of greenhouse gases. What this proposed regulation will do is further weaken our country's global competiveness, prevent us from using a low cost, abundant domestic natural resource with the capability to provide electricity for our citizens for decades to come, and undercut United States job creation just at the time our economy might be beginning to strengthen.

Thank you for your time and attention.

Mr. WHITFIELD. Thank you very much. And Ms. Walz, you are recognized for 5 minutes.

STATEMENT OF BARBARA WALZ

Ms. WALZ. Thank you.

Chairman Whitfield, Ranking Member Rush, and members of the subcommittee, my name is Barbara Walz and I am a senior vice president for External Relations and Environmental at Tri-State Generation and Transmission Association. I appreciate the opportunity to testify before you here today on Tri-State's views on EPA's new greenhouse gas rules, which regulate carbon dioxide

emissions for newly constructed power plants.

Tri-State is a not-for-profit, member-owned co-op based in Westminster, Colorado. Our mission is to provide affordable and reliable cost-based wholesale power to our 44 not-for-profit member systems that serve 1.5 million customers in rural Wyoming, Nebraska, New Mexico, and Colorado. Tri-State believes in a diversified, all-of-theabove portfolio. We generate or purchase power from hydropower, solar, wind, coal, and natural gas. However, renewable resources only provide a small fraction of our power needs. The bulk of our power comes from our coal-based power plants in Wyoming, Colorado, Arizona, and New Mexico.

These coal-based power plants are important parts of the rural communities in which they reside. For example, the Craig power plant in Western Colorado and the coal mines from which the coal comes from employs 750 people and provides \$73 million in annual wages and benefits. Unfortunately, the high-paying jobs and tax base that a power plant like Craig provides to rural communities will be a thing of the past if this EPA greenhouse gas rule for power plants is allowed to stand.

Simply put, EPA has created barriers that will effectively ban the construction of new coal-fired power plants in the United States. Banning the construction of new coal-fired power plants will have far-reaching and devastating impacts for rural communities that depend on coal for affordable and reliable electricity and

for high-paying jobs.

EPA provides an illusory concession for Tri-State and other companies that currently hold air permits but we must commence construction within an arbitrary 1-year timeframe. Unfortunately, the newly issued Mercury and Air Toxics Standards, or MATS, is a rule that is also a barrier to commencing construction within the 1-year timeframe provided in the greenhouse gas rule. Pollution control vendors have told EPA that they cannot guarantee that their equipment will meet the MATS' rule's exceptionally stringent requirements and they cannot reliably measure reductions even using the most advanced measurement technology.

Without such guarantees, project developers will find it difficult if not impossible to find financing and start constructing these new facilities. EPA's greenhouse gas rule will impose a de facto ban on construction of new coal. Tri-State believes this de facto ban is unlawful. For more than 40 years, EPA has followed the mandate of Congress when regulating air emissions from new power plants. Historically, EPA adopted one set of standards for gas plants and

another set of standards for coal plants.

In this new greenhouse gas rule, EPA drastically departed from this Congressional mandate by establishing a new category of power plant that includes both coal and gas plants and a standard that can only be met by natural gas combined cycle turbines, a fact that EPA readily admits. New coal units that do not commence construction within the 12-month timeframe would have to be abandoned or install carbon capture and storage systems, a technology that we have heard today has not been demonstrated and is not commercially available.

EPA seems to have adopted a field-of-dreams mentality regarding unproven and unavailable technology. If you mandate it, the technology will come. Our situation is so dire that the first time in the history of our 60-year-old electric cooperative, Tri-State took the significant step of filing legal petitions for review for the greenhouse gas rule and the MATS rule in the D.C. Circuit Court of Appeals.Tri-State supports regulatory requirements to protect public health and the environment, but standards must be achievable and compliance with them must be measurable.

We urge the committee to exercise continued oversight over the EPA regulatory process because EPA has gone beyond the authority granted by Congress under the Clean Air Act by promulgating standards that are not based on achievable technology. Additional oversight is also necessary so that we may continue to offer affordable and reliable electricity to our member systems and their member owners.

Thank you for your time and I would be happy to take any questions.

[The prepared statement of Ms. Walz follows:]

Ms. Barbara Walz
Senior Vice President for External Relations and Environmental
Tri-State Generation and Transmission Association, Inc. Westminster, Colorado
U.S. House of Representatives
Committee on Energy and Commerce
Subcommittee on Energy and Power
The American Energy Initiative: A Focus on EPA's Greenhouse Gas Regulations
19 June 2012

Thank you Mr. Chairman. Chairman Whitfield and Ranking Member Rush, my name is Barbara Walz and I am here on behalf of Tri-State Generation and Transmission Association, a not-for-profit cooperative that provides electricity to about 1.5 million people in mostly rural areas of Colorado, Nebraska, New Mexico and Wyoming. I am Tri-State's Senior Vice President for External Relations and Environmental, and I appreciate the opportunity to testify about EPA's new greenhouse gas rule for power plants. My message is a simple one. If this rule stands, it will effectively ban the construction of new coal-fired power plants in the U.S. and almost certainly will make electricity more expensive. This statement is not hyperbole or exaggeration. In the greenhouse gas rule, EPA has simply decreed that there shall not be any new coal-fired power plants in the U.S. – at least for the foreseeable future. The impacts of banning the construction of new coal-fired power plants will be far reaching and possibly devastating to some of the rural areas of this country that depend on coal not only for power, but for jobs.

To be fair, this greenhouse gas rule does provide an alleged concession for Tri-State and other companies that are in the process of developing new coal-fired power plants. However, this concession may well prove illusory: to qualify we must commence construction on our new plant within one year. If Tri-State is able to meet that condition, the new coal-fired plant we have proposed to construct in Kansas will not be covered by the greenhouse gas rule. But, as I will explain, this alleged concession does not really help us because another EPA rule known as the

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MATS rule will likely prevent us - or anyone else - from commencing the construction of a new coal-fired plant in time to meet EPA's one-year deadline.

The Holcomb 2 Project

Almost five years ago, Tri-State entered into an agreement with Sunflower Electric Power Corporation to develop a new coal-fired electric generating unit at a facility located in Holcomb, Kansas. We refer to this project as Holcomb 2. In addition to the investment made by Sunflower, Tri-State has invested approximately \$70 million in the development of Holcomb 2. We've even gone through the rigorous regulatory process of obtaining the requisite federal air permits. Yet the years of planning and the millions of dollars invested to develop this project may have all been for naught if EPA is allowed to use rulemaking to essentially ban the construction of new coal-fired power plants.

The GHG NSPS Unlawfully Imposes the Same Standard for All New Power Plants

For more than 40 years, EPA has followed the mandate of Congress when establishing regulations to implement the Clean Air Act. For several decades and for a range of different pollutants, EPA properly used its authority under the Clean Air Act by proposing and then finalizing one set of emissions standards for gas-fired plants and a separate set of standards for coal-fired plants. As recently as last year, EPA acknowledged that for purposes of setting New Source Performance Standards, the Agency is required to propose and then promulgate different standards for plants that use different types of fuel because emissions standards must be based on the "best available system of emission reduction" that has been "adequately demonstrated." That "best system" is different for each fuel type.

However, on April 13, 2012, EPA broke from this precedent grounded in the statute when it published the New Source Performance Standards to control greenhouse gas emissions from fossil fuel-fired power plants. In this rule, EPA created a new category of EGUs that includes virtually all types of fossil fuel-fired plants, including plants that burn gas, coal, oil, and "pet coke." Despite the differences between these types of plants and the fuels they combust, the same emissions standards would be imposed on all sources within this broad new category.

Rather than establishing a standard that is achievable for each type of plant in this category, EPA based the standard on "the demonstrated performance" of *only one type of source* in that category – natural gas combined combustion turbines. EPA admits that no demonstrated system of emission reduction is available to enable any of the other sources in this category (including state-of-the-art coal units like Holcomb 2) to meet this emission standard. In essence, by issuing this rule, EPA has declared that coal-fired power plants cannot be built at all because only gas-fired power plants can install the "best system of emissions reduction" that can meet EPA's standard. The Clean Air Act does not authorize EPA to make this judgment and, therefore, we believe that EPA's actions are unlawful.

Background

Tri-State supports and is committed to good environmental stewardship, but the greenhouse gas new source performance standard (GHG NSPS) will greatly affect Tri-State's ability to provide affordable electricity to our member systems. As a not-for-profit cooperative, Tri-State does not make any profit from the implementation of these rules. Therefore, the cost to comply with these rules must be passed onto our member systems' consumers – meaning the families and individuals at the end of the electric lines.

The GHG NSPS creates a regulatory dilemma for developers of new electric generating units (EGUs). On the one hand, EPA has imposed a strict 12-month deadline for certain new coal-fired power plants to begin constructing those facilities in order to comply with the GHG NSPS. At the same time, EPA has also issued other standards for new coal-fired power plants in its Mercury and Air Toxics Standards (MATS). The standards in the MATS rule are so stringent that compliance cannot be reliably measured using the most advanced measurement technology. As a result, project developers may not be able to obtain certifications from their equipment vendors that the equipment will comply with the MATS rule. Without these certifications, project developers cannot obtain financing to commence construction of these new facilities. As a result of issuing these two rules, EPA has erected barriers to the construction of any new coal-fired power plant that could lead to defacto ban on new coal-fired power plants for the foreseeable future.

Given that Tri-State is a not-for-profit cooperative, we don't tend to find ourselves testifying before Congress or filing lawsuits challenging rules issued by EPA. However, because we have invested nearly five years and approximately \$70 million trying to construct a new coal-fired power plant in Kansas, it is important for Tri-State to try to protect that investment and our membership by challenging these unlawful and unreasonable rules. Therefore, on April 13, 2012, Tri-State filed a petition for review of the MATS rule with the United States Court of Appeals for the District of Columbia Circuit (D.C. Circuit). Similarly, on June 12, 2012, Tri-State filed a separate petition for review with the D.C. Circuit challenging the GHG NSPS rule.

At the May 24 hearing that EPA held in Washington, D.C., Tri-State requested that EPA take prompt and decisive action to withdraw the GHG NSPS rule in its entirety. We plan to

request the same relief in our written comments that we will submit to EPA during the notice and comment period on the GHG NSPS rule.

However, seeking relief through the courts or by participating in the administrative rulemaking process may not provide us the relief we need in time to save projects like Holcomb 2. Therefore, I have come here today to testify before you to highlight two key issues: (1) the GHG NSPS is unlawful because it inappropriately imposes the same unreasonable emissions standard for coal- and gas-fired facilities despite their differences in technology and (2) the NSPS unreasonably creates a 12-month period for so-called "transitional units" to commence construction, which cannot be met due to EPA's MATS rule.

The GHG NSPS Inappropriately Requires Coal- and Gas-Fired Facilities to Comply with the Same Unreasonable Emission Standard

Tri-State believes that EPA lacks legal authority to apply the same GHG NSPS to both coal-fired boilers and natural gas-fired combined cycle turbines. Coal-fired boilers and natural gas-fired turbines are different combustion technologies that fire dissimilar types of fuel.

Under the Clean Air Act, EPA is required to establish a "standard of performance" that is "achievable through the application of the best system of emission reduction" that takes into consideration cost, health and environmental impacts, energy requirements and that "has been adequately demonstrated." Here, EPA has proposed one requirement that <u>all</u> new EGUs (except simple cycle turbines) must comply with, regardless of the fact that this standard has not been "adequately demonstrated" for coal-fired power plants. Furthermore, it is unclear that the standard itself – 1,000 lb CO₂/MWh – is an achievable emission limitation for natural gas combined cycle units. Tri-State has reviewed the carbon dioxide emissions from its facilities and found that its natural gas combined cycle plants emitted approximately 1,300 lb CO₂/MWh

(while its gas-fired simple cycle turbines emitted between approximately 1,200 and 1,600 lb CO₂/MWh). Despite the fact that these units use EPA's preferred fuel – natural gas – they still do not meet the GHG NSPS emission limit. While it is possible that some new, ideally optimized natural gas combined cycle units might be able to meet the 1,000 lb CO₂/MWh standard, there is no guarantee that all new natural gas units will be able to meet this standard. A natural gas unit's ability to meet this standard will depend on numerous variables including turbine efficiency, model, age, generation capacity, and duty cycle. Therefore, we are left wondering: what facilities will be able to comply with the standard? Without a doubt, no new coal-fired boilers will be able to meet the 1,000 lb CO₂/MWh standard and apparently many gas-fired units won't either.

The GHG NSPS Requires Coal-Fired Power Plants to Use Carbon Capture and Storage – an Undeveloped Technology

Another problem with the GHG NSPS is that new coal-fired power units that are not "transitional sources" are required to use carbon capture and storage (CCS) technology, if they want to build such units. The CCS technology that EPA claims can be applied at coal-fired power plants is not technically feasible, has not been demonstrated, is not commercially available, and, even when it becomes available, it will not likely be affordable. The U.S. Department of Energy fossil energy budget for clean coal was reduced from \$680 million in 2009 to \$400 million in 2011 – a 41% decrease in funding. The U.S. Department of Energy budget for carbon capture and storage and power systems is proposed to decrease an additional 25% in 2013. If those problems aren't enough, CCS also imposes a "parasitic load" on a coal-fired power station, meaning that CCS consumes power equal to or greater than approximately 30 percent of the power plant's generation capacity.

Had EPA believed that these problems did not prevent CCS from being a viable "best system of emission reduction" for coal-fired power plants, EPA would have assessed CCS under the Clean Air Act's "adequately demonstrated" regulatory standard. EPA didn't, because it couldn't. Tri-State believes it is clearly unlawful for EPA to mandate the use of a technology that is in its infancy and has not been demonstrated. It is also completely unrealistic to assume that this technology will necessarily develop according to the timeframe provided in EPA's proposed 30-year averaging compliance option. To issue a rule that essentially requires coal-fired power plants to use CCS while refraining from determining whether CCS has been "adequately demonstrated" was disingenuous, unreasonable, and, most important, unlawful.

The GHG NSPS Unreasonably Creates a 12-Month Period for So-Called "Transitional Sources" to Commence Construction

The GHG NSPS provides certain coal-fired power plants known as "transitional sources" 12 months to commence construction in order to avoid CCS. The GHG NSPS defines a "transitional source" as a "a coal-fired power plant that has received approval for its complete PSD preconstruction permit by the date of this proposal... and that commences construction within 12 months of the date of this proposal." This deadline is arbitrary and is the only means provided in the rule for transitional sources to avoid the unachievable emissions standard imposed in the GHG NSPS. EPA has stated that this 12-month period "would not be extended for any reason," including because of legal challenges. In other words, EPA has imposed an arbitrary deadline that EPA announces cannot be extended. Transitional sources have, as EPA acknowledges, expended large sums – or "substantial sunk costs" as EPA refers to them – into developing their projects and EPA makes blindingly clear that EPA will not even consider comments that suggest a different result than the one irrevocably embraced by EPA.

The Unachievable Standards in the MATS Rule Will Prevent Transitional Sources from Commencing Construction Within the 12-Month Period Required in the GHG NSPS

Despite the requirement in the GHG NSPS for transitional sources to commence construction within 12 months, facilities such as Holcomb 2 will likely be impeded from doing so by EPA's MATS rule. The new unit standards that were finalized under the MATS rule are so stringent that pollution control equipment vendors have stated that they will not guarantee that their equipment will reduce emissions to the limits required under the MATS rule.

The inability to obtain these guarantees creates a major financing hurdle for project developers. In order to finance a new electric generating unit, the project developer must obtain guarantees from its equipment vendors that the equipment that will be installed will meet all of the required emission limits. Because emission standards are too low to even measure, the equipment vendors explain that they cannot provide these guarantees. Without the guarantees, outside financing the development and construction of these new coal-fired electric generating units will be difficult if not impossible.

EPA has been informed by numerous sources of these problems with the MATS standards. For example, the Institute of Clean Air Companies (a trade association for approximately 100 companies that comprise nearly all the vendors of air pollution control equipment systems and measurement and detection devices) formally told EPA that that the mercury standard is set at a level that cannot be detected by pollution control measurement systems. Babcock and Wilcox Power Generation Group also told EPA that the MATS emission standards for particulate matter, hydrochloric acid, and mercury for new units are not measurable with sufficient accuracy for reliable control of the emissions reduction systems and sustainable

long term emissions compliance. Despite these warnings, EPA has not changed the standards in the MATS rule.

EPA holds unrealistic expectations about the capability of the electric power generation industry to design, finance, permit, construct, test and deploy new undemonstrated technology - in very short timeframes - in order to comply with the MATS rule. EPA seems to have adopted an unrealistic "Field of Dreams" philosophy that if the agency mandates a standard, the equipment vendors will be able to build it. This perspective confuses fantasy with reality by ignoring the status of existing technology and instead recklessly assuming that the industry will be able to comply with unprecedented emissions standards in a very limited time frame. But most important, promulgated MATS standards that are not based on "achievable" technology, like proposed NSPS that are not based on "achievable" technology, exceed EPA's mandate from Congress under the Clean Air Act.

Conclusion

Tri-State is particularly concerned about the impact of the GHG NSPS rule because we provide electricity to many rural areas of Colorado, Nebraska, New Mexico and Wyoming. Some of these areas are located in the most economically depressed counties of the country. The MATS and GHG NSPS will have real and adverse economic impacts on the entire U.S. population generally, but particularly on those that live in these communities.

The Interior West contains vast quantities of high quality coal with low emissions that can be used responsibly to generate cost-effective energy for a growing region of the country.

The electric utility industry provides well-paying and meaningful jobs in communities across the

country. Our industry also has a significant indirect beneficial economic impact on the communities in which we operate and do business.

Tri-State is not opposed to the creation of regulatory requirements to protect the public health, welfare, and the environment, but those standards must be achievable and compliance with them must be measurable. Furthermore, the deadlines for compliance must allow sufficient lead time to develop, install, and test any new technology that is required. Tri-State urges the committee to exercise continued oversight over the EPA's regulatory process in order to ensure that the agency is issuing regulations that comply with the Clean Air Act as Congress intended. This additional oversight will help us to continue to provide affordable and reliable electricity to our member systems and their member-owners.

Thank you for inviting me to testify here today. I would be happy to take any of your questions.

Mr. WHITFIELD. Well, thank you, Ms. Walz. And I thank all of you for your testimony.

I will recognize myself for 5 minutes of questions.

Mr. Doniger in his statement said that there is no truth to claims that grouping all new plants that perform the same function whether natural gas or coal-fired in the same category under the proposed New Source Standard is a de facto ban on constructing new coal-fired plants. Now, I would ask the other three of you, do you agree or disagree with that statement?

Mr. Winberg? Mr. Winberg. I disagree because the technology is not commercially available to CCS. Coal plants cannot meet the natural gas standard or that equivalent without implementing CCS. If it is not commercially available, it doesn't happen. In addition to that, under the MATS rule—which Ms. Walz referenced; that is the hazardous air pollutant rule—the emission standards are so stringent that equipment suppliers cannot guarantee. So in effect, what EPA has done is they have killed the coal twice.

Mr. WHITFIELD. All right. And Ms. Walz, do you agree or disagree with Mr. Doniger's statement?

Ms. WALZ. I disagree with his statement for the same reasons. Mr. WHITFIELD. OK. And Mr. Wright, do you agree or disagree with his statement?

Mr. Wright. I disagree.

Mr. WHITFIELD. OK. Mr. Doniger, they disagree with you.

Now, you know, there are so many issues here and all of us are very focused on this issue and we are dealing with very complex problems, obviously, and there are no easy solutions, but there is developing this animosity between EPA and certain Members of Congress and vice versa. But, for example, EPA refers to the Mercury and Air Toxic Standard—sometimes referred to as Utility MACT—and when Lisa Jackson and others in the Administration came up to testify and were selling that new regulation, they emphasized that the benefits would come from the reduction of mercury.

And yet, when the analysis of their analysis took place and they subsequently admitted that there were negligible benefits from mercury reduction, that the majority of the benefits came from reduction of particulate matter, which is governed in another section of the Clean Air Act. And it is that kind of misleading the American people that creates animosity and makes it more difficult to deal with some of these issues.

And particularly, when someone like Lisa Jackson—I don't think there is any question but that she has a goal of putting coal out of business. I think that is pretty obvious.

And now, Mr. Wright, you are with the South Carolina Commission and one of your responsibilities I am sure is to protect ratepayers and also be concerned about reliability. Now, from your perspective as a commissioner, are you concerned about rate increases and are you concerned about reliability because of this greenhouse gas regulation?

Mr. Wright. Yes, sir, I am very concerned, which led me back September of last year to file a 209 petition with the FERC to have a study started with us on the impact of all these EPA rules because EPA was saying that there hadn't been these studies done and they hadn't really been taking to States about it. So we started the dialogue. That is what got everything cranked I think. And now, we have a dialogue going with FERC that EPA is participating in. I am not saying that we have had any give yet. We have heard a lot but we are working toward that.

But, yes, I am concerned about the cost to the utility companies for compliance which are going to be passed on to ratepayers and it is going to impact rates, and they are going to go up. I don't care if you go with the low-end number that EPA's throwing out there or the high-end that has come in some of these studies. It is going

to hurt people.
Mr. WHITFIELD. Right.

Mr. Wright. And I have got to keep utilities whole.

Mr. Whitfield. Yes. Ms. Walz, your company is sort of caught in a bind here because you have got to start construction within 12 months and then you have also got to meet the MATS standard. How much money have you all invested in this plant so far?

Ms. WALZ. Today, we have invested \$70 million into the plant to

get to this stage with some early design and air permitting.

Mr. WHITFIELD. Seventy million?

Ms. Walz. Correct.

Mr. WHITFIELD. And you are not sure what is going to happen, I am assuming?

Ms. Walz. Correct.

Mr. WHITFIELD. OK. Well, my time has expired.

And Mr. Rush, I recognize you for 5 minutes.

Mr. Rush. Well, thank you, Mr. Chairman.

Mr. Doniger, do you agree or disagree with your statement?

Mr. Doniger. The statement we were discussing?

Mr. Rush. Yes

Mr. Doniger. I made the statement that there is no de facto ban and I disagree with my colleagues who disagreed with me. And the reason there is no such ban is that the market realities have already driven the decisions on new power plants away from building new conventional coal plants. And I would like to quote Brookings economist Peter Wilcoxen who said in April, "to put it simply, the lifecycle costs of coal-fired power are considerably higher than gasfired power. This is not a theoretical matter. Over the past decade, the electric power sector has responded by adding more than about 200 gigawatts of gas-fired capacity, and about 2 gigawatts of coal."

And aside from a few plants that were planned some time ago, such as the Tri-gen plant, are in this transitional category that EPA has gone out of its way to accommodate. There are no new coal plants coming and it is market realities that they are reason for that. So to scapegoat these regulations is just that. It is

Mr. Rush. Has the Obama administration, in your opinion, ever

engaged in a war on coal?

Mr. Doniger. No. The Obama administration is carrying out the Clean Air Act which this Congress passed with a mission to protect our health and our environment including our climate from the adverse effects of pollution from power generation and from other industries. The goal is to clean up the pollution and it is a neutral goal. The EPA has gone out of its way to provide a pathway for coal with carbon capture and storage, which is the only future for coal, for new coal plants to prosper under this regulatory framework.

And contrary to one of the other witnesses, Siemens and other companies do provide guarantees for the performance of their equipment related to carbon capture and storage. And there are other projects underway—the Kemper Plant, for example, in Mississippi and two other coal plants—one, the Summit Plant in West Texas, and a plant in Southern California from hydrogen energy. And in the new carbon capture and storage this is something that can be done now.

Mr. Rush. In my opening statement I cited a June 6 Chicago Tribune article entitled "Extraordinary Extremes: Climate Scientists Explain our Crazy Weather," written by two university professors, Dr. Donald Wuebbles and Mr. Aaron Packman. In the article these climate experts reported that in March there were over 15,000 warm-weather records that were broken across the country. They also reported that the National Oceanic and Atmospheric Administration received 223 reports of tornadoes where above 80 is the norm for March.

Mr. Doniger, besides these things that I just mentioned, the article also outlined a number of additional extreme weather occurrences which they suggested as strongly tied to human-related climate change. Are you aware of any extraordinary weather patterns associated with climate change, whether it be extreme weathers, rising sea levels, coastal flooding, or the like? Can you also share with this committee how these changes may endanger the health, welfare, and livelihoods of ordinary American citizens?

Mr. Doniger. I can say Americans have had extraordinary personal experience with extreme weather in the past year or so. In 2011—and these are monthly records. Your article referred to daily records. But we have 3,251 broken monthly weather records across the country. And we have an online map tool on our Web site that tracks these and the destruction they caused. Now, 2012 is off to another record-smashing start. March 2012 was the hottest March in the contiguous U.S. since record keeping began in 1895.And the year from June 2011 to May 2012 was the warmest 12-month stretch the U.S. has ever had.

Mr. Whitfield. Thank you. At this time I recognize the gentleman from West Virginia, Mr. McKinley, for 5 minutes.

Mr. McKinley. Thank you again, Mr. Chairman.

Mr. Doniger, did I hear correctly again, you say there are carbon capture commercially available facilities in this country?

Mr. DONIGER. What I said was there are manufacturers-Siemens, Mitsubishi, and GE who—

Mr. McKinley. But they are none in operation right now that are——

Mr. DONIGER. There are three plants in the works in addition to the FutureGen Plant. Southern Company is building one at Kemper in Mississippi.

Mr. McKinley. OK. I am just curious about that because we have to do it now under this rule. It has to be in—

Mr. Doniger. No, we have to do it 10 years from now.

Mr. McKinley. Well, you have to start in the process is what I am saying to do it now. The EPA said in November 2010 that carbon capture and storage should be evaluated but in most cases will not be technologically feasible or affordable.

Mr. Doniger. That is for plants where it would have to operate

now.

Mr. McKinley. If I could retain my time because I just had to—there seems to be this new something in the water that says we are not having a war on coal. I find that startling and disturbing that people can make that kind of testimony and try to get away with it. Because even Lisa Jackson went on to say when she testified here about maybe a month ago about the carbon capture that she was going to get back to me with the names of the facilities and where they are located and that hasn't occurred yet. So I would be real curious to see where we go with that.

Mr. Winberg, if I could with you in a relatively short time, you perhaps heard some of the testimony from the previous panel. And again there are outrageous claims that there is no war on coal. And they are trying to use the argument that employment is up in the coalfields. And I just want to say right here in the paper in West Virginia we lost 1,400 jobs last month in the coal industry. So when you couple that with the realization that we are down from 1.2 billion tons now to just under a billion tons, we are already

using less coal in America but we are exporting.

Exporting coal is up 20 some percent from approximately 50 million tons to over 100 million tons in just 6 years. Isn't that where a lot of the jobs that are being created now, or holding on to, is we are exporting it because we can't burn it here? There is an attitude coming from the EPA that this pushing back against the use of coal-fire facilities and threatening them with new regulations,

what would you suggest?

Mr. WINBERG. I would suggest that there is a deliberate effort to reduce the amount of coal burned in the United States. Various estimates are somewhere between, on the low side, 40 gigawatts out of 300 gigawatts of coal up to maybe 90 or 100 gigawatts of coal. That would be about a third of the coal fleet. That could be several hundred million tons of coal lost here in the United States. So I think there is a very deliberate effort by EPA to reduce the amount of coal burned in the United States and—

Mr. McKinley. Are they deliberately distorting numbers? Do you think that is what is going on here to keep up this message? Because they know there is a war on coal. They know that the employment is going to be affected by it. And if they are not aware, just in one State, 1,400 jobs just lost last month because of the lack

of the use of coal in America and we are exporting.

But yet you go to the West Coast where they are actually trying to stop the exportation of coal at these ports. And yet they try to say with a straight face we don't have a problem with coal. Come on. How do you deal with this? I don't understand these economists. How are we supposed to not laugh when we hear this kind of testimony?

Mr. WINBERG. Well, I think the way we don't laugh is because it is simply not funny. It is jobs that are being lost here in the United States, sir. Mr. McKinley. Thank you. Thank you. I yield back my time.

Mr. WHITFIELD. Thank you.

At this time, I recognize the gentleman from Virginia, Mr. Griffith, for 5 minutes.

Mr. GRIFFITH. Thank you, Mr. Chairman.

Ms. Walz, I heard Mr. Doniger say that the EPA had gone out of its way to accommodate you all. Your comments on that state-

ment, please?

Ms. WALZ. I would say it is simply an illusion. You know, they gave you 12 months to commence construction, and you have all these other rules that you are facing, MATS being one of them that you have comply with as well. And you don't have a vendor that can design you equipment to meet the standards, and therefore, you don't have financers willing to come forward, so

Mr. Griffith. So you disagree with that statement?

Ms. Walz. I disagree, yes.

Mr. Griffith. And I would have to say to my colleague from West Virginia that I think the language on the war on coal changed when 40 percent of the Democrats in West Virginia decided not to vote for the incumbent in the presidential primary. And so suddenly, we have seen the language change.

My experience also coming from coal country is is that coal is under assault and that it is driving up electric prices just as Can-

didate Obama had promised.

Mr. Wright, if I might ask you, how many applications from various companies, energy-producing companies that you all regulate, have come in in the last, I don't know, 2 or 3 years to reduce the cost to the consumers of energy because these new regulations are creating so much prosperity in your State?

Mr. Wright. That would be zero but we have had a lot come in

for rate-

Mr. Griffith. I knew that.

Mr. WRIGHT [continuing]. Increases. And if you go to a night hearing with me, you would learn a lot about your heritage when

they start fussing at you.

Mr. Griffith. Yes. And your experience in South Carolina is is that they have not asked for any reductions but there have been increased requests. Would you say that for most of the companies over the last 3 to 5 years that there have been multiple increase requests because of their increase costs in both providing the fuel to power the plants—and this is my experience in Virginia—multiple requests both on the power side and on meeting the regulatory requirements? Is that true in South Carolina as well?

Mr. Wright. It is very true. In fact, the last few rate cases that have come before us that have been decided, we basically limited

it to just the environmental compliance costs.

Mr. Griffith. And are your rate cases similar to those in my home State of Virginia in that these costs, as President Obama said in his famous San Francisco quote, "these costs will be passed on to the consumers?" Is that true in South Carolina as well, that when these costs are added to the production of electricity, that gets passed on to the consumer?

Mr. Wright. As long as it is proven to be just and reasonable,

yes, sir.

Mr. GRIFFITH. And would it also be your opinion, as it is mine, that the consumers who get hit the hardest are in fact the poor,

the working poor, and the elderly?

Mr. WRIGHT. The large majority of our population in South Carolina is below the median national income and they are getting hit really hard. And it is not just from electric sector because all utility sectors are experiencing problems—the water sector, the gas pipeline sector, the telecom sector, and the electricity sector. And it is going to be trillions of dollars in the next 15 to 20 years.

Mr. Griffith. Trillions of dollars? Is that just for South Carolina

or is that an estimate of the region?

Mr. Wright. That is in the country.

Mr. Griffith. In the country?

Mr. Wright. Um-hum. And that is not including the compliance to this new suite of regs. That is just infrastructure replacement

and upgrades now.

Mr. GRIFFITH. And that is trillions of dollars that will be passed on to the consumers, which will disproportionately hurt the working class, the poor, the middle class, and the elderly. Isn't that true?

Mr. WRIGHT. It is. And in the regions that are coal-reliant, the increase is going to be much more than any 6.5 percent. It could be multiples of that.

Mr. GRIFFITH. And that is why it is not funny, isn't that right?

Mr. WRIGHT. There is nothing funny about it.

Mr. GRIFFITH. Can you explain to me how anybody could be that cruel?

Mr. WRIGHT. I don't really know why it is happening. All I know is that we are trying to slow the train wreck down somehow. We are not saying don't do it, but we need to find a way to do it right.

Mr. GRIFFITH. And if we have reasonable time to comply and find new technologies to make sure that in fact—not just theoretically—but in fact that technology was available. Everybody wants to move in that direction but if we do it too fast, we end up killing the goose

that laid the golden egg. Would you not agree?

Mr. WRIGHT. If you try to rush to all of this and everybody is trying to push a certain fuel—and we have heard natural gas—to try to do the retrofits and do all the upgrades that need to happen or even build new generation, you are competing for craft labor. It is going to artificially drive up cost in a very short term. If you gave a little bit more time for compliance, you are going to reduce the impact to ratepayers in the long run.

Mr. GRIFFITH. I yield back, Mr. Chairman. Mr. WHITFIELD. The gentleman yields back.

Mr. Rush. Mr. Chairman?

Mr. WHITFIELD. Yes?

Mr. Rush. Mr. Chairman, in the course of this hearing I referenced an article in the Chicago Tribune dated June 6, 2012, and I ask unanimous consent that this article by Donald Wuebbles and Mr. Aaron Packman be entered into the record.

Mr. WHITFIELD. Without objection.

[The information follows:]

$\frac{http://www.chicagotribune.com/news/opinion/ct-perspec-}{o6o6\text{-}climate-20120606,0,1084142.story}$

Chicago Tribune

OPINION Extraordinary extremes Climate scientists explain our crazy weather



In the last decade, Americans were twice as likely to see an extreme high temperature as they were an extreme low. (Alex Garcia, Chicago Tribune / July 21, 2011)

By Donald Wuebbles and Aaron Packman June 6, 2012

It's been a hot start in 2012. Over the Memorial Day weekend, high-temperature records were set in 16 states. Chicago hit 97 degrees — the

hottest May 27 in the city's 142 years of record-keeping. Cleveland, Detroit, South Bend, Ind., and Toledo, Ohio, all hit record highs as well.

In March, more than 15,000 warm-weather records across our country were broken. Chicago had its warmest March in recorded history as locals swapped winter coats for shorts and enjoyed 80-degree afternoons. Meanwhile, other areas of the country endured tornadoes, tossing multiton trailers around like toys. The National Oceanic and Atmospheric Administration received 223 reports of tornadoes; 80 is the March norm. Ohio and parts of the Southeast faced a string of tornadoes in early March that caused an estimated \$1.5 billion worth of damage.

At coffee shops, truck stops and around backyard grills, many people are asking the same question: Can we expect more of this? The answer: Yes.

There is a strong probability that climate change is influencing certain extreme weather events.

That's what we, as climate scientists, know. And, we're not alone. Insurance industry leaders think so, too, and they have been meeting with U.S. senators to call for action.

Extreme weather events, coupled with huge destruction costs, reflect a growing trend. In 2008, 2010 and 2011, there were 100- or 500-year floods in Iowa, Missouri and Wisconsin. In April 2011, the nation suffered through 875 tornadoes; the previous one-month record was 542.

As the climate changes, Earth's normal cycles become altered. Whether from human-related or natural causes, shifts in temperature associated with the changing climate can change the amount of water vapor in the atmosphere, and this can lead to major changes in the probability for extreme weather. Some evidence can be found by looking at the ratio of extreme highs and lows in U.S. weather over the last 50 years.

In the 1950s, our country had about the same number of extreme heat events as it did extreme cold. That is, the probability of an extraordinarily cold January day was as likely as an excessively hot July day. By the 2000s, however, we were twice as likely to see an extreme high in our weather report as we were an extreme low.

Scientific models are starting to suggest that disasters like the 2010 Russian heat wave, which resulted in the loss of 50,000 lives and billions of dollars of wheat crops, are likely related to human-induced climate change. Recent studies have shown that the salinity and acidity of our oceans are changing, indicating major changes in the Earth's hydrologic cycle. As we understand more about the processes affecting climate, our understanding of the Earth's complex cycles becomes more nuanced. Evidence is rapidly mounting that we are living in a changing world where climate change is affecting our weather, sometimes in extreme ways.

Fortunately, there are steps we can take to adapt to and mitigate climate change.

We can grow America's investments in renewable energy, powering more homes with wind and solar energy. We can advance energy-efficiency policies and use better appliances and equipment that avoid wasting energy and save money on utility bills. We can manufacture and drive more fuel-efficient cars that save money at the gas pump, lessen America's dependence on foreign oil and reduce greenhouse gas pollution. We can invest in building a Midwest high-speed passenger rail system that improves mobility, reduces pollution, creates jobs and pulls together the regional economy. We can improve infrastructure that makes trains and other public transit work better and makes bicycle-riding a safer option for commuters.

We can and should educate ourselves about climate science. We can use one of the most pressing issues of our lives as an opportunity to foster open and frank dialogue about the ways for people to work together to ensure the Earth's productivity now and for generations to come.

Donald Wuebbles is a professor in the departments of atmospheric sciences and electrical and computer engineering at the <u>University of Illinois at Urbana-Champaign</u>. Aaron Packman is a civil and environmental engineering professor at Northwestern University.

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http://www.chicagotribune.com/news/opinion/ct-perspec-0606-climate-20120606,0,1084142.story Mr. WHITFIELD. At this time, the chair recognizes the gentleman from Kansas, Mr. Pompeo, for 5 minutes.

Mr. Pompeo. Thank you, Mr. Chairman.

Ms. Walz, you have been trying to build a coal-fired power plant in my State for a long time.

Ms. WALZ. Yes, we have.

Mr. Pompeo. Successfully, so far. Roadblocks have included our former governor and the Secretary of Health and Human Services, a bunch of environmental groups that have files lawsuits, an EPA that you just said a few minutes ago has not in fact gone out of its way to help you get it done. I heard a minute ago someone contradict that and I actually asked Ms. McCarthy at our last hearing if there was technology capable, if you could find suppliers who would guarantee that they could hit the outcome that is needed to comply with these regulations, she said she would get back to me with the names of the companies. She has not chosen to do so at least at this point in time.

Although today, Mr. Doniger mentioned Siemens. Have you talked to Siemens? You said that you haven't been able to find anybody that can do it at your plant either. Talked to Siemens? They

are operating that big wind plant up there.

Mr. Doniger. Congressman, I was referring to their guarantees

about CCS technology.

Mr. POMPEO. So there is no one you have talked to, Ms. Walz, that can help you build your plant that will be in compliance with all the regulations that you—

Ms. WALZ. There is not. We have solicited that information.

Mr. POMPEO. So why don't you just give up? Why don't you build a natural gas-fired plant or an algae plant or a wind plant instead?

Ms. WALZ. Well, we believe that our mission is to provide reliable, affordable electricity. And there is an abundance of coal in the western U.S. in our service territory and we believe it can be done cleanly. And we have just gotten pushed so far with all of these environmental regulations layering on top of each other. We have felt compelled, as I have said for the first time in the history of the company, to sue EPA.

Mr. POMPEO. Yes. And the fact that you have got \$70 million of

your own risk capital at stake to add to that, too.

Ms. WALZ. Correct. That would be absorbed by our members, the farmers, the ranchers, small businessmen in the rural communities.

Mr. Pompeo. Yes, that is a big deal out in western Kansas.

I want to ask all three of you, Mr. Doniger made the comment that these regulations will have no impact on ratepayers, and I just want to see if there is anybody on the panel—Mr. Wright, you have already said how much impact you thought it had. Mr. Winberg, big impact on ratepayers?

Mr. WINBERG. Yes, sir. Mr. POMPEO. Ms. Walz?

Ms. WALZ. Yes, big impact on ratepayers.

Mr. Pompeo. And so, Mr. Doniger, I will ask you. When a utility issues a press release after going through a rate review through—and in the case of Kansas, the KCC—and they said the reason we

wouldn't ask for this rate request was because of environmental compliance cost, do you think they are wrong or are they lying?

Mr. Doniger. Well, Congressman, you are mixing up apples and oranges. What I came to testify about was the proposed standard for power plant carbon pollution. And that will have no impact on ratepayers because no one is planning to build coal plants.

Mr. POMPEO. So this is what I thought. Let me just reclaim my

time

Mr. Doniger. On the mercury standard-

Mr. Pompeo. Let me reclaim my time. I thought that is where you would head with that. I appreciate that. So let me get this right. So you set forth a set of rules and then you observe that the response from the industry is not to build the power plants that your very rules deny the opportunity to go build them, and then you look at the world and say, gosh, no one is building one of those; it certainly must the case that there will be no economic impact associated with these rules. It would be as if I said to my son, there is a penalty for going swimming and I found he was working in the yard consistently. And I said, gosh, it is funny; there must be no harm to him from not being able to swim because I find him in the yard all day.

Mr. Doniger. Well, Congressman-

Mr. Pompeo. This is the logic which you present to us, Mr.

Doniger.

Mr. Doniger. No, I think not, Congressman. Congressman, the reason for the trends in the direction of construction for coal and gas is about the economics of natural gas.

Mr. Pompeo. Today, today, Mr. Doniger.

Mr. DONIGER. Yes, sir. Mr. POMPEO. Yes, today.

Mr. Doniger. And-

Mr. Pompeo. But perhaps not tomorrow. Your rules-

Mr. Doniger. And EPA has done an analysis of what would happen if the-

Mr. POMPEO. Mr. Doniger-

Mr. Doniger [continuing]. Price of natural gas goes south. It would have to go up five times-

Mr. Pompeo. I have got but a minute left. We know that the-

Mr. Doniger [continuing]. In order to affect the economics.

Mr. Pompeo. Mr. Doniger, I have but a minute left. We know that the price of these various inputs varies over time and so construction of plants and decisions about the economic players will make about the use of the capital would vary over time. To put these rules in place not knowing whether we will go back to 14 bucks in MCF or remain at 2 or 2.50 in MCF is ludicrous on its face and to say it doesn't impact ratepayers is silly.

Mr. Doniger. There is no one that expects-

Mr. Pompeo. I yield back the balance of my time.

Mr. Doniger [continuing]. It going back to \$14 in the next-

Mr. WHITFIELD. The gentleman yields back the balance of his time. And I see no one else here to ask questions.

So I want to thank all of you, members of this panel. We appreciate your testimony and your thoughts on this important subject. We will keep the record open for 10 days. And with that, the hearing is concluded.

[Whereupon, at 1:02 p.m., the subcommittee was adjourned.]

[Material submitted for inclusion in the record follows:]

Statement of Representative John D. Dingell House Committee on Energy and Commerce Subcommittee on Energy and Power The American Energy Initiative June 19, 2012

Thank you, Mr. Chairman for having this hearing today on some very important issues. As members of this subcommittee know, I have had many serious disagreements with the EPA over the years. There are serious concerns that need to be addressed in the Clean Air Act and from time to time I've been worried that industry will bear an undue burden as the result of EPA rules, thus effecting jobs in manufacturing states like Michigan.

Unfortunately, in the series of hearings and markups this subcommittee has held on the Clean Air Act and EPA rules resulting from the Clean Air Act, I have yet to hear of one proposal or one solution other than to block a rule or add more compliance time. I understand that with the current struggling economy, it may be difficult for utilities to deal with the costs imposed by new regulations. However, I believe that the EPA has tried to be responsive to these concerns and is aware of the difficulties utilities and other companies are facing.

At a February hearing I asked EPA Administrator Lisa Jackson if the New Source Performance Standards, which at that point had not been proposed, would apply to modified sources as well. She answered that she understood the difficulties modified sources would have in meeting the NSPS regulation and that the technology for them to comply is not commercially available. Ultimately, the proposed rule did not include modified sources and prevented what would have been a significant compliance problem.

In releasing the Mercury and Air Toxics Standards rule, Administrator Jackson and the White House encouraged local air permitting authorities to charitably use their one-year extension authority to allow utilities to comply with the rule. This was in recognition of time and manufacturing constraints in installing new emissions control technology. Many utilities have publically said that they can achieve compliance within a three to four year period and the extension gives them the extra time they need.

In passing the Clean Air Act Amendments of 1990, which a number of my Republican colleagues on this Committee cosponsored, the Energy and Commerce Committee held over 70 hearings during a 10 year period and 21 more during the 101st Congress. A total of seven House Committees participated in the Conference Committee. My point in saying all of this is that any changes to the Clean Air Act must include vigorous debate, not just with the people we agree with, but also those we disagree with. It must also include careful analysis of the Clean Air Act and what problems it creates and what this Committee and Congress should do about these problems. To my colleagues I would say if there is a problem, we should use the limited time of the Committee to address the question of what are the problems here and then what are the alternatives or solutions.

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Mr. Chairman, I yield back my time.